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ADDRESSES.

THE PRESIDENT'S ADDRESS.

Delivered at the Fortieth Annual Meeting of the American Medical Association, Newport, R. I., June 25, 1889.

BY W. W. DAWSON, M.D.,
OF CINCINNATI.

The Premier, Mr. Gladstone, after quoting the statistician who estimates the English-speaking people at the close of the next century at one thousand millions, says: "What a prospect is that of many millions of people, certainly among the most manful and energetic in the world, occupying one great continent." This destiny in numbers is startling, but the assertion of Dr. Dolinger, a German scholar, portrays the culture of the future almost as strikingly when he says "that the intellectual primacy of the whole world is certain to fall to the Anglo-Saxon race." Most of that race will be in America.

Looking to such a future the position of the learned professions is certainly conspicuous—their obligations imperious. Medical men should be loyal to this grand destiny.

An eminent modern critic, in discussing civilization in America, while admitting that we have well solved the political and social problems, asks what have we done to solve the human problem, "the humanization of man in society." The struggle in his own country, he asserts, has resulted in "an upper class materialized, a middle class vulgarized, a lower class brutalized."

We trust that our efforts have yielded better fruit; and since medical science and medical men are prominent factors in society, among every people, we may well ask, what have they accomplished, what part they have here taken in the solution of the vital problem? In the "Century of Medicine," Prof. E. W. Clark in his classical address says:

"It is not an extravagant assertion to say, that in all this turmoil, change and progress (referring to the revolutions and changes in society, religion and government for the past century), medicine has kept abreast of the other natural sciences, of politics, and of theology, and has made equal conquest over authority, error and tradition," and it may be added, has contributed largely to man's

comfort, happiness and advancement. To intensify this, reference need only be made to some of our triumphs, to Vaccination, to Anæsthesia, to Sanitation, the prevention of pestilence, the lengthening of human life. It is, however, more especially the contributions of the profession in America to which attention is desired at this time. What are we doing in the humanization of man, in the work of civilization?

Are our medical practitioners and our medical teachers what they should be? We shall see. Criticisms abound concerning the defects of medical education. Those who do not condemn, often ridicule. These criticisms and strictures are made for the most part, it must be said, by gentlemen unacquainted with teaching, without any practical knowledge of the constitution of medical colleges, or of the toil, devotion and sacrifice made necessary by those engaged in didactic and clinical instruction.

These censorious addresses are delivered before and to a body of professional gentlemen, the peers of any, some of whom have grown gray in the hard service, others are still in the prime of life, with reputations coextensive with civilization. The rest are young, full of life and enthusiasm, fired with ambition to render loyal service to that profession which they have chosen. Can our system be so defective? The pessimistic orator seems to forget that he is the product of the system of medical education which he is so severely condemning. Some one has said, "By retrospection and introspection an individual, like a profession, may be benefited." In this self-examination we should have but one motive, the elimination of error, the development and support of truth.

Education cannot make all great or equal. It tends, however, to make all safe. In the crucible of private, practical life, evolution asserts itself and the fittest survive.

In making a retrospect of our profession it may be well to look for a moment at medical teaching in this country.

The way is long between Aristotle and Bichat, and Buckle says that he found no middle-man in this long period; it is darker than it is long. During all this time medicine was not taught legitimately. The renaissance, if it may be so called, began with Hunter and Bichat. No real progress,

however, could be made while oxygen remained locked in the silent embrace of all organic and inorganic nature. Priestly, escaping from the religious and political contests, and it may be persecutions, of the old world, came to this country to demonstrate his great phlogiston, oxygen.

Bichat and Hunter restored the proper study of medicine. They represent the turning-point from idealism, speculation and theory, to accurate and close observation. The latter, John Hunter, in 1767, was lecturing and taking students into his own house, and it is curious to know that here, in far off America, Shippen and his contemporaries in Philadelphia and New York, about the same time, or very soon after, began teaching medicine and surgery upon essentially the same plan. Of these men, one who so recently passed away, that you can almost hear the sound of his voice, and feel his magnetic presence, when speaking of the men who lived at the close of the last, and during the early part of this century, said, and justly said, "Not a few of them were the worthy peers of Roux, Abernethy, Crampton, Bell, Graefe, and Scarpa."

To quote again:

"During the past century, medicine has been enfranchised from superstition, *quasi-charlatanism*, bold empiricism and speculation, and has developed into a symmetrical science, affiliated with the other natural sciences, studied by the same methods and by the same appliances as they are, and like them, has been planted upon the solid basis of fact and demonstration."

It may be profitable for us to inquire and determine what part the profession in America has taken, in placing medicine upon the high ground which it occupies. What have we done, what are we doing, and what forecast can we make of the future?

At the close of the eighteenth century, Boerhaave declared that all that had been learned up to that time was comprised in three propositions: "Keep the head cool, the feet warm, the bowels open. All other pages in the volume which he left were blanks. Many pages, however, it will not be denied, have been filled during the present century. What have been our contributions? Have they been such as to rank us with the acknowledged conservators of mankind?

In giving attention to this subject let us for a moment reflect upon the peculiar position of the profession and of medical teaching in this country. For many years (and even now) with few exceptions, medical colleges were the creation of the members of the profession, most often of the faculties composing the schools, without endowment—indeed, it may be said that almost everything on this continent is endowed, except medical colleges—without Governmental aid, depending for their support upon the sacrifice of time and money on the part of the gentlemen occupying

the chairs. Yes, not only without patronage from the Government, but society, from some unknown cause, has ever been against legitimate medicine, depending upon the scientific physician in time of trouble, yet, in the interim, openly supporting all sorts of shams, frauds and impostors.

Elsewhere, college work is provided for by the State; especially laboratory investigations—the nature and the genesis of disease. Hence, it is not strange that, in such departments, we may not be so far advanced as our European brethren; but, while they have been engaged in experimental studies, we have developed the practical. But everywhere is seen among us an earnest, a burning desire for higher culture, for more exact and accurate knowledge. Especially is this true of our younger members and of those about entering the profession.

A movement is being made to concentrate those who have had preliminary advantages—those who enter the profession as college-bred. No objection can be urged to this if it be not too exclusive. All efforts, in fact, to refine our profession without emasculating it, should meet with judicious approval.

THE PHYSICIAN OF THE FUTURE.

Whence are medical students to come? What facilities are now afforded, and what does the future promise for the education of our young men, the class from which the medical student, the "coming doctor," is to be selected? The answer to this question will give some comfort, we trust, to the pessimist, and soothe the restless and at times unreasonable critic. And now as to our resources for this work.

By the last census it was shown that nearly four thousand institutions—schools for higher learning—existed in the United States, and that nearly four hundred of them ranked as Colleges or Universities. In these are massed, yearly, sixty thousand pupils. They, together with two hundred thousand common, or primary schools, in the higher grades of which the curriculum nears that of many colleges at home and abroad, a third of a century ago, may be looked upon to supply, year after year, a better material from which medical students will be drafted.

Prof. Charles W. Eliot, in his beautiful and forcible Centennial response, enumerated our educational facilities more generously. He painted our future more hopefully when he spoke of the 8,000,000 children in elementary schools, 250,000 in secondary schools, 60,000 in colleges, with 360,000 teachers to train and develop them.

Every one traveling through the States—especially those of the West and South, and those situated in the far away mountains, and on the Pacific—must be impressed with the onward march of public instruction, the gradually increasing general intelligence, and the vast sums

that are annually expended for the education of the people. Public school buildings, by their size, adaptation and attractive surroundings, give an impression which the most skeptical must feel, a promise of the future which cannot be misread. From such as these, scientific medicine must reap a share. Every teacher, every one connected with the examination of candidates for the medical degree, knows—and the knowledge is reassuring—that, year after year, the grade of the medical student is advancing, that the material out of which the practitioner is made is constantly growing better, becoming stronger; in other words, that the preliminary education of our students is steadily becoming more broad and comprehensive. I gave utterance to this view a few years ago, in an address which I had the honor of delivering to the State Medical Society of Ohio. Time, I believe, has confirmed what I then said. This confirmation is seen in our graduates as they go forth to take up the line and battle of life. Are they not the equals of the graduates in other professions, in law and theology? As life advances, are they not the peers of any, in all the useful elements of true manhood? Are they not the citizens of best rounded characters, citizens most relied upon by their neighbors in foul as well as fair weather?

Again, in addition to facilities already referred to, the most generous provisions are being made, all over our land, for institutions which will be worthy to be called Universities. From these, graduates will emerge worthy to rank by the side of those bearing the prized degrees from Oxford, Cambridge, Paris, Heidelberg or Leipsic.

During the summer of 1888, I witnessed the beginning of a University in California which, in scope and equipment will surpass, probably, any school upon the continent. Should Governor Stanford live to develop his conceptions, that far off State will have an institution of which not only the Pacific Coast, but our entire country; yes, all civilization, will feel justly proud. It may be so liberally endowed that it will command the best abilities of the world.

Of course, upon such an occasion as this, it would hardly be expected that I should in detail refer to the many liberal donations and bequests which have been made, by generous citizens, for developing higher culture—a more comprehensive education. I will, however, be pardoned for referring to a few, and I may say, without being too enthusiastic, that the future is aglow with promise. The high-hearted examples which have been set will be followed by other favorites of fortune, and this country may surpass the world, not only in common schools, but in her institutions for broader and deeper education.

In looking at this promising future, may we not hope that, before another half century closes, students from the old world will flock to this, to

sit at the feet of the wisdom here installed? Is it too much to hope that, in the not far off future, the preliminary education of our students will be equal to that required in the best schools of the world?

Defective as has been much of the material, yet have we not produced some marked results? Our best are equal to the best anywhere; mediocrity always and everywhere finds its own. The poor in medicine, the weak brother, however much we may deplore him, however much we may train him, we have, like the poor, always with us. This is the lot of humanity in all lands, among all peoples, new or old. A word as to the physical qualities of "the coming doctor." Recently a distinguished foreign traveler, in speaking of our educational facilities and national peculiarities, said: "Students are much calmer than their colleagues in Europe. They don't at all trouble themselves about politics or affairs outside their line of duty, and with the practical sense which animates the nation, they try to make the best use of their time. They fight no duels, and it is only for health and recreation that they take part in various sports and games." These remarks apply with equal, in fact, with greater force, to medical students.

It is to the country schools, not to the city-bred, that medicine must look for many of her strong recruits. Cities too often emasculate—young men are vitiated by indulgence and vice before they become possessed of serious thoughts, before they realize the elements of a healthy, vigorous life. It is this country-bred, this excellent material which is, as we have seen, yearly growing better and better qualified to enter upon the duties of the profession. From these we must look for the men of distinction, the leaders of the future.

Is this picture overdrawn? One word more. In many of the States of the Union, in addition to the liberally supported free schools and schools for higher education, already colleges have been established through the munificence of the General Government, in which the degrees of A.B. and A.M. may be obtained. They are absolutely free colleges, at which the poorest boy in the commonwealth may receive a classical education. And here you will allow me to say, we cannot insist too strongly upon the necessity of classical education; without it the medical man must ever be at a disadvantage. Without a knowledge of Latin and Greek, sure and distinguished success is uncertain. The student may neglect Algebra and the Higher Mathematics, but let him, by all means, have a liberal knowledge of languages.

At the last commencement of one of our western schools, "40 per cent. of the graduating class had been admitted on diplomas from literary or scientific colleges. The balance of the class had received from one to five years of academic or collegiate instruction." This college is with-

out endowment—depending entirely upon the learning, devotion and sacrifice of the Faculty.

But to return. Prominent among the States in providing institutions for advanced culture, the great frontier State, Texas claims a high position. The University of Texas will be one of the most liberally endowed; millions of acres of land have been donated for university purposes. There, in that Empire State, may yet be seen one of the greatest schools of literature, science and philosophy on the Western Continent. The University of Virginia, projected in the early days of the century, by her great commoner, Thomas Jefferson, has yearly sent forth graduates equal in all the elements of advanced scholarship to those from any school. This may seem high praise, but the records of her alumni justify me. The same may be said of Harvard, Yale, Princeton, Columbia, Cornell, and of most of our older institutions. The University of California has already an annual revenue of about \$200,000. The Michigan University, with a yearly income of almost a quarter of a million of dollars, has well nigh two thousand students, taught by more than one hundred teachers.

Let us not, gentlemen, be impatient; the influences are already projected which will give us students equal to—up to—the highest standard of preliminary preparation. If we have accomplished so much in our primitive stage, what may we not expect when all our great preparatory works come fully into action?

From this view of the resources from which medical students are to be drawn, and of the liberal preparations and facilities for their culture, we may well ask, what is the profession doing to profit from such advantages?

Some of the classical schools at Oxford and Cambridge were organized as early as the thirteenth century, but the systematic, scientific study of medicine and surgery came long subsequently—not for four hundred years later—about the middle of the eighteenth century. It was first projected in Great Britain, and soon after in our Atlantic cities. Unlike the Old World, our fathers had a wilderness to conquer before progress could be made. When the Pilgrim Fathers left England, reading and writing were rare accomplishments; chimneys in that country had just been invented, and flock beds were luxuries. The adventures—the emigrants to these shores from that ancient and imperfect civilization—had much to learn, but in the midst of their pitiable ignorance, facing great hardness and pressing wants, they were quick to provide educational opportunities for all. The result of their efforts are apparent—they are before us. Could more have been accomplished in one century?

MEDICAL SCHOOLS.

Our medical colleges now number a few more

than one hundred. They may be classed as: 1, Metropolitan, those in large cities. 2, Medical colleges in less pretentious cities. 3, Medical colleges in small cities. 4, State medical colleges. For convenience, however, we may speak of them as Metropolitan and Provincial.

Before speaking more definitely of our medical institutions, allow me to refer for a moment to the proposition, that medical schools in our country have been developed by the labors, by the self-sacrifice of the profession. As previously stated, it may be said that in this country everything is endowed except medical colleges, schools for teaching medicine. Yes, all financial responsibilities have been and are assumed by the faculties, by men who give every hour not devoted to "earning the guinea" to college work, and in most instances, without pecuniary reward. It is only recently that the wise, the generous, the favorites of fortune, and a few of the States, have conceived the idea of endowing medical schools, institutions where medicine and surgery can be cultivated without the embarrassments of financial responsibility. In the presence of such facts, the work of the grumbler seems indeed ungracious.

In our Metropolitan colleges, every physician may feel a just pride; their graduates, most of them, will compare favorably with those educated anywhere on this earth.

The accomplished Dr. Senn, after a liberal experience with foreign schools, said: "There is no question in my mind, that the average American student learns more in one month, than the average German student in three. He learns more, not because he has better teachers or better facilities, but he makes better use of his time. I am satisfied that in our last graduating class, I had at least a dozen students, who, after studying three years, would pass a brilliant examination in any English or German university. They would have felt at home, even in a dress coat in Volkmann's Klinik passing their final examination."

Provincial schools do praiseworthy, yes, thorough work in training young men, not only in rudimentary branches, but in practical, clinical studies. Many supplement these by hospital attendance in the great cities, and by post-graduate courses. It is gratifying to know that these organizations are being established in all of the great medical centres.

The advance in medical education is again most distinctly pronounced by a remark recently made by one of our distinguished fellows, an American-bred physician, of whose fame we are all justly proud. In a conversation, Dr. Batty said: "When I began the practice thirty years ago, there was scarcely a graduate within fifty miles of my residence; now, however, there is hardly a practitioner in the same territory who is not a graduate, and, year after year, a portion of

our young men leave home to avail themselves of clinical advantages, to attend post-graduate instruction." Could anything show more forcibly the conservative and steady growth of medical culture?

HAVE MEDICAL COLLEGES INCREASED TOO RAPIDLY?

Should they be established in small cities where clinical material is limited, where it must be comparatively scarce? Before answering this, it may be well to reflect upon the proposition, that in our own country, as well as elsewhere, great achievements have often been made in the Provinces and not always under the shadow of the Universities. One of the great operations waited for years for a metropolitan disciple—one to take it up—and that too, long after the provinces, at home and abroad, had demonstrated its vital utility, its claim upon the scientific and skillful surgeon.

As our population increased from three to sixty-five millions, the demands for medical men were great—colleges increased necessarily. Have they multiplied in undue proportion?

In answering this question, I beg again to quote from my beloved master, Samuel D. Gross, to whom this question had been put. After mature deliberation, he said: "Our colleges are not annually graduating one physician for each county in the States and Territories. This is certainly not exceeding the demand." A considerable proportion of those who graduate never enter the ranks—death and desertion claim a large share. It would simply be impossible for the metropolitan schools to graduate all required.

For the introduction of young gentlemen into the profession, there is a mutual responsibility between teachers and preceptors. In very truth it may be said that colleges do their duty, their very best, with the students furnished by the preceptors. Give us liberally-educated young gentlemen, and we will furnish graduates worthy of the degree. Medical colleges, however, do not make the physician. They merely furnish the foundation work; the individual must do the balance. In no place is evolution so marked—the fittest will and should survive.

LABORATORY WORK.

Huxley says: "The microscope extends the realm of Pathological Anatomy to the limits of the invisible world."

"The intimate alliance between morphology and medicine has made the natural history of disease attain a remarkable degree of perfection."

Dr. George M. Sternberg, the distinguished Pathologist, recently connected with the Smithsonian Institution, in referring to some of the laboratories established in this country for the study of Pathogenic Microorganisms, says: "It

is no longer necessary to go abroad for instruction in this department of science, since the Laboratory of Prof. Welsh, in Baltimore, and the Hoagland Laboratory, in Brooklyn, afford facilities which are unsurpassed by any of the laboratories of the old world."

Indeed, it may be said that provisions for the study of Pathogenic Microorganisms are established in most of the leading schools of this country—in New York, Philadelphia, Boston, Baltimore, and the cities of the West and South.

You will pardon me for mentioning some of the investigators.

Johns Hopkins' University has for its Director, Prof. William Welsh. The Hoagland Laboratory, of Brooklyn, New York, established through the generosity of Dr. C. N. Hoagland, has been built and equipped in the most complete manner for research work in Bacteriology and Experimental Pathology. Prof. George M. Sternberg is to be the Director of this advanced institution.

At the University of South Carolina, Dr. Meade Bolton, who has had the best of training at Berlin and Göttingen, is at the head of a laboratory. Dr. H. C. Ernst has the direction of a Bacteriological Laboratory in connection with the Harvard School of Medicine.

Prof. James T. Whitaker, who had the honor of being the first American student of Robert Koch, demonstrated, at Cincinnati, in 1882, the tubercle bacillus, after a lecture upon the subject before the Philadelphia Academy of Medicine. In 1887 the Medical College of Ohio imported a complete outfit for Bacteriologic study. The conductors of the Laboratory, Drs. Rachford, Cameron and Freeman, during the first course, had the opportunity of doing some good work in the discovery of the typhoid bacilli in the reservoir supplied from the Ohio River, then at a very low stage. The discovery led to the general adoption in the city, as advised by leading physicians, of boiling all drinking water, a plan which undoubtedly limited the spread of the disease.

Among others may be mentioned Dr. Prudden, of the College of Physicians and Surgeons, of New York; Dr. Geo. A. Kemp, of Brooklyn; Dr. Mall, of Baltimore; Dr. Booker, of the same city; and Dr. Frank S. Billings, of Lincoln, Nebraska.

One of the earliest, most accomplished and accurate cultivators of microorganisms, is Dr. James E. Reeves, of Chattanooga. His technique is singularly beautiful. Many of his preparations are to be found in the National Museum.

Dr. Victor C. Vaughan and Dr. Heneage Gibbs, conduct laboratory work at Ann Arbor.

The University of Pennsylvania has at the head of its laboratory Dr. John Guiteras, a Pathologist who has distinguished himself in the study of the origin and spread of yellow fever.

Thus it will be seen that in all parts of our

country—East, West, North and South—laboratories are being established for original work.

HISTORY OF MEDICAL TEACHING IN THIS COUNTRY.

A brief review of medical teaching in this country will be pardoned—it may be profitable—it will certainly illumine the present, and may be somewhat of interest to the future.

The first medical lectures were delivered by Dr. John Morgan and William Shippen, in 1767, in Philadelphia. Dr. Rush and Dr. Physic soon after participated, and in 1768 the medical department of the University of Pennsylvania was organized; that great school which is steadily advancing to the highest station. Philadelphia was a small, a provincial city at that time; now she is only second to the great metropolis in numerical strength, but second to none in the thorough equipment of her medical schools.

Contemporaneous with Philadelphia, an organization was projected for medical instruction in New York. In 1767, the first steps were taken which resulted in the school, ever since known as the "College of Physicians and Surgeons," one which challenges the confidence of all. The medical colleges of New York, endowed, not by government, but by her public spirited citizens, have won the honors which they wear so well.

In 1785, the first school was organized in Boston. The chairs were four, and the session four months. Harvard is the outgrowth of this humble beginning of that provincial faculty.

In 1800, the first medical instruction was given in Baltimore; since then, the schools of Maryland have occupied a deservedly high position. Recently one of her citizens made an endowment by which the "Johns Hopkins University" will be equipped for the most thorough work, experimental work, laboratory studies, a range and grade of investigations *en report* with the spirit of the times.

This great benefactor has also given to Baltimore one of the most completely equipped hospitals to be found on this earth.

The great Mississippi Valley was yet unknown, but soon after the close of the Revolution, emigration began, and as early as 1799, Dr. Samuel Brown organized the medical department of Transylvania University. Dr. Benjamin Dudley effected a reorganization in 1819. This school, after many prosperous years, having graduated men who acquired distinction at home and abroad was transferred, or rather, most of the faculty removed to Louisville, when and where the University of Louisville was founded.

During the early part of the century, medical schools were organized in several of the Eastern States, usually under State or Church patronage. Most of them exist to-day. Some of the most distinguished men in our profession have been associated with these institutions.

As the West and South were peopled, medical schools were established in cities and promising towns. As early as 1819, Dr. Daniel Drake secured the charter of the Medical College of Ohio, and had it legally connected with the City Hospital. The faculty constituted the hospital staff, the members of which were required to give clinical lectures—the first forward step on the continent, in blending didactic with clinical instruction.

The physicians in South Carolina began medical teaching in 1823, and those of Louisiana in 1835. In both of these States schools of high character have been maintained.

In closing this very brief review of our colleges, Metropolitan and Provincial, I think it may be said that year after year the standard of the Doctorate is being elevated, preliminary examinations and graded courses are being adopted, the smaller schools, to which most blame is attached, whether justly or not, with a disregard of self-interest seldom seen, are yearly reducing the size of their classes by insisting upon higher preliminary education, by extending the curriculum and by graded instruction.

MEDICAL JOURNALS.

Medical journals, Metropolitan and Provincial, are the heralds, the vanguards of medical progress, the exponents of professional culture. They are closely associated with the colleges in education and in post graduate instruction. In them appear the best thoughts of the best men; they constitute the great forum of intellectual combat; upon their pages pretension is analyzed and estimated, and worth recognized; that which is new or original is endorsed, or rather encouraged; it is only the plan, the original investigation which is endorsed; the results, the conclusion must be subject to the crucible of test and trial.

The London *Lancet* and the *American Journal of the Medical Sciences* were almost contemporaries—who can overestimate their value—their influence in medical progress. While our journals, both Metropolitan and Provincial, are freighted with the best thoughts of the best men, yet, it must be confessed, that trash and light material—very light material—may be found in all, but the reader, nevertheless, will find much that is not worthless.

THE JOURNAL of this Association has won its way to its present high position by its dignified course and its essentially scientific character; but has it reached its full usefulness? A learned and distinguished author, and a highly prized fellow of our Association, at my suggestion, gives his views upon this question.

Dr. Comegys says: "The undertaking, seven years ago, to establish a weekly journal, was a happy conception, and has been carried on as successfully as the resources of the Association

would admit. To Dr. N. S. Davis unstinted praise is due; proportionate praise is also due the Board of Directors with whom he has been associated.

"A large number of the members believe that it is entirely feasible to enlarge *THE JOURNAL* and give to it increased capacity for usefulness; indeed, that it should be made more fully capable, as the organ of the Association, to assert and maintain the dignity and power of the medical profession as one of the greatest factors in civil life; that to it society must ultimately turn, to find, not only the resource to assuage the distress arising from the diseases and accidents of life, but as to its protection from all those evils that fill the land with apprehension of desolation and ruin.

"We know to what an immense extent we can estop the approach of the pestilences that desolate lands and which menace, through the paths of commerce, the whole area of civilization. We know what we can do to improve the homes and places of labor of the lower and toiling classes of cities and other crowded centres of population. There is nothing, indeed, connected with our own social State, which the medical profession should not supervise and which it should not have the power to control. A great organ is necessary to enlighten, strengthen and lead the profession in all directions to bring, to bear its beneficent agency for the correction of the terrible evils of society.

"Such a journal must be made encyclopædic in character, in which can be found the proceedings of distinguished societies of this country and of Europe, the work of the chief actors of medical progress in all parts of the world. Twelve thousand subscribers would give \$60,000, this would insure \$40,000 from advertisements, making an income of \$100,000, which would sustain one of the grandest journals in the world.

"The *British Medical Journal* in fifteen years has 14,000 subscribers and an income of \$125,000. May we not hope to reach this, and when we do, who can compass the good which the American Medical Association will accomplish."

THE MEDICAL AND SURGICAL LIBRARY AND MUSEUM AT WASHINGTON.

Another important factor in professional culture is the great Library and Museum at Washington, evoked by the efforts of an American bred physician, John S. Billings. The Library of the Surgeon-General's office of the army now contains 92,000 volumes, and 137,000 pamphlets, being the largest collection of medical literature in the world, and it is not only the largest, but the most useful. This is because it has an Index Catalogue, which not only shows what the Library has of the works of any author, but for any given subject, indicates all the original articles in journals and transactions, as well as the

books and pamphlets which relate to it, and thus forms a Medical Bibliography which saves an enormous amount of time and labor to those engaged in medical literary research. This catalogue is being published at the rate of one volume a year, nine volumes have been issued, and six more will complete the work. The Army Medical Museum is a great pathological school, and now contains over 15,000 specimens, being one of the eight largest museums in the world, and richer than any other in illustrations of Military Medicine and Surgery. This Library and Museum are national in scope and character. They have at least been securely placed in a fire-proof building well adapted to their needs, thanks to the efforts of the medical profession, and we should see to it that they are maintained and increased to the highest degree of completeness and efficiency.

The Medical Profession asks very little of the General Government, but it does ask that these two institutions shall be made as useful as possible. The number of copies of the Index Catalogue, which Congress authorizes to be published is hardly sufficient to meet the demand, and the repeated requests for authority to publish an illustrated catalogue of the Museum for distribution to the profession have not yet received any attention from Congress, and it is time we took the matter in hand. When we, who are the family physicians of our Senators and Members, say to them that this is a thing that ought to be done and must be done, it is pretty certain that it will be done. There is nothing that will do more to promote higher medical education, to stimulate research, and to crown American Medicine with honor, than to give ample means to this great Library and Museum to obtain materials and to publish widely the results.

MEDICAL AND SURGICAL HISTORY OF THE WAR.

This matchless record of Military Medicine and Surgery, is a marked testimony to the profession of our land. Let us for a moment compare it with similar work elsewhere. After the great Crimean war was over, its experiences, collected, weighed and analyzed, how strange in the light of present surgery, and in what contrast with the lessons taught in our great conflict, is the record of McLeod upon one vital operation—trephining for fractures of the skull. In his "Notes on the Surgery of the Crimean War," that distinguished gentleman says:

"If any patients were lost from not having been operated upon, I never saw any of them, but I do know of some patients who died because they were subjected to operation."

And what a fearful commentary upon military surgery of that campaign McLeod makes when he writes:

"Thus it would seem as if severe fatigue,

irregular, and, it might be, intemperate diet, are less injurious to men with fracture of the skull than the probings, pickings and trephinations which form the more orthodox and approved practice."

It may be truly said that the judicious use of trephine during the conflict between the States, supplemented after the war by American surgeons, especially by one of our fellows, Prof. W. T. Briggs, led up, led surely, safely and steadily to the achievements of Victor Horsely, the master of us all in brain surgery.

MEDICAL SOCIETIES.

Our medical societies, local and National, are great factors in professional progress. Not alone are they valuable for their social opportunities, but in and through them a vast amount of valuable matter is presented.

MEDICAL LITERATURE.

Had Sidney Smith been a physician and given to reading, he would not, even in 1850, have asked the questions: "Who reads an American book?" "What does the world owe to American physicians and surgeons?"

This reverend gentleman, this famous critic, could not have heard of Ephraim McDowell, whose brief paper, detailing his first three cases of ovariectomy, published in "The Philadelphia Repertory," in 1817, was of more value, did more for the conservation of human life than a score of ordinary publications. Our first half-century may be poor in books, but it abounded in strong, brave conscientious and devoted men, men who, with the most limited resources, accomplished the grandest results. They compelled success because they deserved it.

The ink was hardly dry upon that cynical pen when anæsthesia was presented by the profession so poor, as he supposed, in valuable works.

But what country or age can match, in great contributions to the relief of the suffering, McDowell, Sims, Bigelow, Sayre, Batty and Emmett, and that trinity of men—Wells, Morton and Jackson—who gave anæsthesia to the world. Think of anæsthesia and of its influence upon the progress of medicine and surgery. But yesterday a writer in the London *Lancet* gave a graphic history of its reception in London; how the great Liston, having a patient who could not nerve himself up to the point of consenting to have a limb amputated for strumous disease of the knee-joint, decided, that, "if the insensibility could be insured and maintained for one minute, he would amputate." Reflect for a moment on the hesitancy of the great surgeon of University College Hospital, as he stood by the side of that patient; he could hardly believe the novel report as it came over the sea. Willing and anxious as he was to operate, he hesitated to urge the poor pa-

tient to make the experiment—experiment it then was. In a week, however, it was legitimate practice all over the world.

The heart of every American physician is filled with thankfulness when he remembers that in the Providence of God this great boon to humanity was vouchsafed to his country. The very ground upon which stands Massachusetts Hospital is sacred to us all. Associated with the discoverers must ever be the name of Dr. Hayward, who performed the first operation under the strange letheon. Previous to this operative surgery was slow, tedious and almost cruel. Contrast it to-day with what it was previous to 1847. What grand strides it has made under the direct support of anæsthesia and its almost equal co-laborer, anti-sepsis; the great cavities are invaded, and invaded safely; the abdomen has become a familiar field, and who can forecast the surgery of the brain?

Since Emmett's operation we hear no more, neither in this country nor abroad—neither in London nor Berlin, neither in Paris nor Vienna—of that culmination, that *ultima thule* of ignorance, "ulceration of the os." What a disgrace that term was to the surgery of the world!

The ignorance in diagnosis was only surpassed by the cruel treatment which it evoked, the application of caustics to the tender everted membrane of the cervical canal.

Has the operation, Bigelow's litholapaxy, the crushing and evacuation of a stone at one sitting, been truly estimated? Its adoption in one celebrated case might have changed the destinies of Europe. Previous to Bigelow, lithotritry was an uncertain, and, in most hands, a cruel operation: "Crush all possible at a short sitting, and allow the fragments to pass *via naturalis*." Bigelow realized that if anæsthesia is safe for two minutes, it is safe for two hours or more; hence, he said, "Crush it at once, and evacuate the bladder by an aspirator." The operation, in proper cases, is as practical as the description is brief and efficient.

The accomplished Edmund Owen, M.B., F.R.C.S., upon calculus, says: "With rare exceptions only two operations are now practiced—suprapubic lithotomy and crushing, with evacuation at a single sitting." A high compliment from an eminent authority.

The story of Ephraim McDowell, though so often repeated, humanity never tires of hearing. To us he belongs, and to us only; we cannot share his fame with another; we would not if we could. Who can measure the relief which his operation has bestowed upon suffering woman?—not only woman, for his was the genius which opened the way for laparotomy in both sexes.

CLOUDS.

What has been accomplished by the profession in this country, self-reliant, and as we have here-

tofore said, without governmental or social support, is certainly worthy of congratulation, and gives ground for hopes of a rosy-hued future; but, alas! there are some dark clouds to be seen—some spots on our sun of promise! Have we inherent defects in our organic law—our *esprit de corps*?

Upon the face of our promising future some omens of evil appear, indications which look not up but down, not forward but backward, not to the elevation but rather to the degradation of our profession. Heretofore we were an organization into which no species of fraud could enter; pretension, ignorant pretension, stopped at the door. No *ism* or *pathy* was admitted; something more than a diploma, "a legal diploma," was required—a clean bill of conduct, free from false assumption, assumption of universal knowledge, of specific remedies, of imaginary potencies; in fact, of all shams and false claims, a guild in which there was the greatest freedom for the truth, the largest liberty for the right. No vendor of secret remedies was admitted, because of the ignorant presumption in which they were conceived and propagated; but, alas, that we should have fallen upon the evil times when "patented processes" are attempted, when "processes" of valuable remedies are kept secret. These remedies with "patent processes" are in daily use. This is one of the dark spots in the picture. It came in with the "legally qualified practitioner." What is antipyrin, antifebrin, salol, sulfonal? The reliant patient may well propound such questions. Who can answer them? Are we relegated at one fell move back into outer darkness, the associates of vendors of "secret remedies," of "patented processes"? What higher is a "patented process" than a "patented nostrum"? The profession was never so low as to countenance the latter; but have we not, in these latter days, become propagandists of patented and, therefore, secret processes?

LAWS FOR THE REGULATION OF THE PRACTICE OF MEDICINE.

It may be asked, has the standard of professional excellence been raised by laws enacted in many of the States for the regulation of the practice of medicine?

These laws banish the poor creatures without diplomas, but make respectable, *quasi*-respectable, all who have so-called diplomas from whatever source. Shams and pretenders are in this way made "legal," and claim whatever protection and recognition that term may give or imply. A chartered institution, in most of the States, represents a formal application for incorporation to a Secretary of State, the signature of that officer, and nothing more. The process of graduating from such—the faculty often consisting of but a single person, or a man and his wife—would hardly be

called a farce; the subject is too serious. "Legally qualified!" think of it; and yet this legally qualified creature will claim and expect to meet the highest and the purest. Is this an advance upon the requirements of the Code, the morals and *esprit de corps* of which have never been questioned?

What has been the effect of these diplomas? Let any candid man answer. Have they not tended to make vice and presumptuous ignorance respectable?

Let us be true to ourselves; pitch cannot be touched without defilement. Our profession must be kept pure or else it will degenerate and sink to the level of a trade.

In State Boards of Health, by the side of physicians, we find these "legally qualified" practitioners. Where lies the responsibility? Is it with us? Our self-examination on this subject should be searching. If we have failed in our duties to humanity, let us be swift to acknowledge it, and be still more eager to correct our error.

The presence of this body of professional gentlemen, representing our entire country, furnishes sufficient argument for the existence of a National Organization; one embracing the virtue and strength of the profession, one to which all questions should be referred for just and final decision. Questions will arise, differences of opinion will occur between honest men. We must have some tribunal, some body, to which these questions, these differences of opinion, can be relegated for solution. The golden rule is a principle, not a law; it cannot interpret itself. Its application to life in detail must be defined. In this respect we are like other men and other organizations. Our *morale*, however, is higher; it has a zeal, a spirit, a hope and confidence peculiarly our own. If we would have our organization pure, we should make it strong—strong enough to eliminate all that is not true or truthful. We are mortals, not transcendentalists. We cannot live as the commune. We must have laws; remembering always that they are not made for the righteous, but for the sinner. "They that be whole need not a physician, but they that are sick." I will not attempt to defend the ethics of our profession. It would be a poor compliment to your intelligence, to your manhood; for there is not a clause in our Code which a gentleman could not cheerfully obey. Organize whatever we may please: Associations of Specialists, of Physicians, of Surgeons; Academies of Physicians; Congresses of Physicians and Surgeons; but let us not lose our loyalty to this parent Association. Projected almost half a century ago, when medical societies were few, it has annually convened—in the North, in the South, in the East, in the West, and in the far West, on the Pacific shore. If you will examine its yearly roster, you will find that it em-

braced the best and the wisest. Almost all who were present at the beginning are at rest; their places have been filled by worthy men. Thus yearly new life—new men being added—this Association can not grow old.

"When a people hold their lives and property as nothing, the enemy has already suffered defeat." So too, when virtue will not compromise with vice, the victory, although it may be long delayed, will surely come.

Of the American Medical Association, let us unite in saying, *esto perpetua*.

OUR DUTIES AS JOURNALISTS AND THE REFORMS WE SHOULD PER- SISTENTLY ADVOCATE.

*Presidential Address Delivered before the American Medical
Editors' Association at its annual meeting held at
Newport, R. I., June 23d, 1889.*

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To fill with satisfaction to myself, and with justice to you, the high office bestowed upon me by the Association of American Medical Editors, is a most difficult and embarrassing task. The high rank and standing of the Society, its mighty influence throughout the land, to say nothing of the talent, the brilliancy and the scholarship of its individual members—all seem to demand of me certain special gifts and qualifications which I feel scarcely able to supply.

The most intelligent audience, however, is often the least given to criticism, hence I venture to address you with some slight degree of confidence, yet, at the same time, with a full appreciation of the honor conferred upon me.

It is useless to comment further upon the power which this Association may yield, not only as regards the medical profession of which it forms so important a part, but in other fields, where energy and influence are no less urgently demanded. It remains for me only to indicate the reforms which seem to be most urgently needed, with the full confidence that by the assistance afforded by the medical profession they will be brought to a happy termination.

What then shall be our line of action during the years to come? What changes should be inaugurated? What projects already undertaken should be carried on to completion? These are questions which it becomes us at this time to consider and decide upon. In their treatment, however, we are hampered by the superabundance of facts and suggestions which present themselves, and which by reason of their importance demand special consideration. Let us, however, study those requirements which may be held as essen-

tial to the prosperity and healthful growth of the medical profession.

The subject of medical education as it exists in the country to-day has been often commented upon and held up to criticism. It is a widely recognized fact that year after year there go forth from our colleges hundreds of young men who are totally and manifestly unqualified for the work before them. As candidates for admission, they are, in many cases, unfamiliar with the first principles of English composition, to say nothing of the other primary branches of learning. As graduates they have been found familiar with not one-half of the diseases observed in general practice, much less with the various specialties of medicine. Not only are such men allowed to enter the colleges, but they are solicited and encouraged so to do, by inducements without number, so that no one, of whatever race, nationality or condition, be he moral or immoral, ignorant or well informed, can have any plausible excuse for not studying medicine, and not taking a diploma after receiving two courses of lectures.

For these reasons our system of medical education has become unfavorably known throughout all foreign countries, and such reputation is working us irreparable injury. The present state of civilization demands for our profession not stock companies which derive their revenues wholly from the fees of their students, and which consequently make large pecuniary demands without any adequate returns, but rather, institutions which are able to exercise independence and can, to a certain extent, choose their own students, and can insist upon a four years' study of medicine. There should be three years of clinical work besides such instruction, with frequent examinations by the faculty, and no student should be awarded a diploma who has not a good knowledge of practical anatomy, surgery and obstetrics, as well as a fair clinical acquaintance with the various specialties of medicine. I believe that by proper legislation such a curriculum will be adopted and carried out by every college in the country, while the various mushroom institutions which now exist will be compelled to go into bankruptcy from lack of support.

To bring about such reforms is to excite much hostile feeling and adverse criticism, for both money and influence are pledged for the maintenance of diploma mills, and sympathy is often enlisted even for an unworthy cause; yet with the means at its disposal, it certainly lies in the power of the profession to protect itself and the public as well from the dangers which have been so long in active existence. Recognizing as we do the many shortcomings of the medical colleges and the men they graduate, it seems urgently required that some remedial measure should be at once advocated and put into operation.

We are practically aware of the fact that many of the existing laws governing the practice of medicine are of very limited application, and avail little as regards the suppression of quackery in its various forms, and the protection of the medical profession. Most harmful and disreputable systems of practice are thus allowed to exist and indeed to flourish, and it is difficult and at times impossible to secure the conviction of any one guilty of malpractice. Those who hold diplomas and are now engaged in medical work are, to a great extent, beyond our jurisdiction. It is in the prevention as much as in the treatment of these evils that we are specially concerned. To prohibit the manufacture of ignorant and unscrupulous practitioners, no less than to convict and punish those who already exist, should form our chief aim and purpose.

One of the measures which promises the best results is the establishment of State Boards of Medical Examiners, which might be appointed by the Governor of each State, upon the recommendation of its own medical society. To such bodies should be entrusted the sole licensing power, with the privilege of rejecting all applicants who are found to be notoriously incompetent. Such action has already been taken by at least four States, and in a modified form by five others, all of whom have recognized the fact that it is only in this way that satisfactory results may be attained. We have over one hundred medical colleges in the United States, and the number is steadily increasing. In most there are no preliminary examinations worth mentioning, indeed so great is the competition among the latter that the college which should presume to demand anything but money of the applicant would soon find itself supplanted by the great number who demand nothing at all.

Again, in the various schools of a higher grade there is a disposition to insist upon technical and purely theoretical points, and a disregard of the more practical aspects of medicine. To these various faults and deficiencies there may be applied a like remedy.

State examining boards requiring of the applicant a high standing of scholarship and a thoroughly practical acquaintance with the duties of the profession, would quickly eradicate the worthless institutions, would institute improved methods of instruction, and would enhance the value and the dignity of those medical schools of the first class which are now taking the lead in these measures of reform.

Thus with the increased preliminary requirements an extended and graded college course, with its many improved facilities for instruction, and the final test exercised by an independent examining board, there is an absolute certainty of limiting the number of schools and the number of graduates, and likewise of bringing to the

profession a degree of dignity and status unequalled at any time in its past history.

The policy of protection holds good in the case of medical practitioners as well as in the importation of foreign labor and manufactures. While American physicians are prohibited by the most stringent laws and regulations from practicing in Europe, yet on the other hand, a foreigner with little or no education may come to this country and practice his calling without fear of molestation. The result is a large influx of incompetent and otherwise undesirable men, who come to join the three thousand or more graduates who are turned out yearly by the various medical colleges of this country. The laws governing the practice of medicine in Europe are most stringent and effective, and few, if any, enter the profession there before attaining a fair knowledge of its duties. In Germany, Russia, Switzerland, Italy, Spain, Portugal and other countries, a rigid state examination is demanded. In France the requirements are equally high, while in some parts of Europe the applicant for a license, in addition to his other qualifications, must be a naturalized citizen. In short, we have nothing in this part of the United States at least, which compares in efficacy with the requirements adopted by most other countries. The consequence is we receive upon our shores not only those who have failed to obtain licenses, but also those who have never applied for them; moreover, many of the medical immigrants have little or no knowledge of our institutions or language. They are foreign taught, and know nothing of American methods of treatment. For these latter reasons alone they should be debarred from practice. This state of affairs would, I believe, find an efficient remedy in the supervision exercised by the State Boards of Examiners, who might sit in judgment upon these cases as well, and thereby render their country a valuable service.

While the quack, the pretender, and the incompetent doctors demand, and often receive, fees which are quite out of proportion to the services rendered, the regular physician is too often defrauded of his just dues. In all other professions scientific work demands a more or less adequate compensation, and by virtue of existing safeguards satisfactory returns are generally made for services rendered. In the medical profession, however, there exists comparatively little protection against possible losses. The physician is at the mercy of the dishonest patron, and it is only after a long period of attendance, involving perhaps a great expenditure of physical and mental labor, to say nothing of loss of time, that he becomes aware of the moral and financial standing of his patient, who is oftentimes inclined to depreciate rather than extol the service which he has neglected to pay for.

This state of affairs has existed for years—the

patient going the rounds of the medical faculty and receiving advice and medicine gratis, while the physician suffers in reputation as well as in a pecuniary way. It is time that these acts of dishonesty meet with the punishment which they so richly deserve. During the last few years there has been an effort made in various localities to remedy this evil, and by a plan which has met with success wherever it has been adopted. I would advocate therefore, the establishment in every town and city of a Physicians' Protective Alliance, by which a complete record may be kept of all who are able but unwilling to pay for medical attendance, together with such other facts as occasion requires. With such a method in operation the receipts of the physician would be more in proportion to the amount of labor expended, and his services held in far greater estimation.

There has arisen no question of more vital importance than that which concerns the protection of our country from the invasion of contagious diseases. Yet it is a most singular fact that few civilized nations possess regulations which are so lax and inefficient as ours. Those which now obtain have been inaugurated after long, persistent and laborious effort. Although appropriations have been obtained from the government to be used in the time of need for the suppression of epidemics, yet by reason of the few existing laws and the many restrictions placed around them such sums cannot, and never will enable us to exercise the proper sanitary precautions. Under existing circumstances quarantine is maintained, if maintained at all, by individual States, whose laws possess no uniformity whatever. It has been stated that there are but three ports in this country where proper precautions are in force. The efficient quarantine of one port, however, not only fails at the present time to protect its own State, but really adds to the dangers of the adjoining States, which possess no safeguards. Given one harbor of entry, where infected vessels may repair, the quarantine of all others must necessarily prove of little avail, and it is apparent from this exposed condition of our coasts and the free intercourse existing between the States, we are in constant danger of infection from various sources. An occasional appropriation to be used in cases of emergency, when danger is imminent, fails utterly to meet our wants. At the same time it is not just that individual States, situated on the seaboard, should be compelled to bear the expense of protecting the inland States. Although by means of a large expenditure of money we have thus far protected many of our seaports, still many thousands of dollars have been foolishly wasted, and no permanent or definite results obtained. This applies not only from dangers from foreign sources, but also to those which arise in our midst, and by reason of faulty safe-

guards are allowed to increase and multiply and to extend from one community to another. It is important that the health laws of all towns, cities and States should be clearly defined and identical in their provisions, and at the same time readily executed. It seems wholly improper that the Marine Hospital Service should any longer attempt to carry on any portion of this important work, in fact it would be difficult to determine what special qualifications this department possesses that it should assume an interest in such matters and constitute itself an almoner of the health funds. It certainly has many and important duties of its own, and should therefore be allowed the time necessary for their proper performance. Upon reviewing the question, therefore, from its various standpoints, there appears to be no better way of remedying the numerous evils and shortcomings which exist than the establishment of a National Bureau of Health, which should form a distinct department of our national government, and to which should be entrusted the general supervision and enforcement of all measures relating to sanitation, as well as to coast and inter-State quarantine. The appropriations allowed this Board should be generous, and there should likewise exist a permanent fund which could be drawn upon in sudden emergencies which might arise.

Having secured in this way a general uniformity of all sanitary laws and regulations, with intelligent methods and with abundant means for carrying them into execution, we may expect more brilliant and lasting results than have heretofore been attained. In this Department of Health it would be highly proper that the chief executive officer be made a member of the cabinet as evidence of a proper appreciation of the dignity and importance of one of the most practical branches of human education and knowledge.

That the work of this Board may be carried on with the best results, and in order that there may always be found intelligent aid and coöperation, it is important that the students of all of our colleges should receive instruction in sanitary science. In this latter there has recently been a rapid advance, and in no other department of medicine have greater or more brilliant results been noted.

No specialty can be pursued with better and more definite results than this one, and as the most intractable and fatal diseases seem to be the very ones which are most easily averted, it follows that no practitioner who is unfamiliar with the first principles of this science, can perform his duties with the greatest profit to himself and with justice to his patients. In these matters the physician is, as a rule, wholly self-educated, and in the investigations he may wish to make, labors under disadvantages which a proper preliminary training would have obviated. So urgent, how-

ever, are the present demands of preventive medicine, that we have reason to hope that, with the necessary encouragement on our part, every medical college will be obliged to recognize their importance by establishing a chair of sanitary science, by which students may acquire all of the known facts relating to biology and allied topics, together with the necessary data for future investigations. Said an English writer more than thirty years ago, "Redoubled attention should be devoted to hygiene, both public and private, with a view of preventing disease on a large scale and individually in our sphere of practice. Here the surest and most glorious triumphs of medical practice are to be achieved." The discoveries which have been made and the results which have been attained during the past few years, are but the fulfilment of this prophecy, and should render the student more devoted to sanitary science than ever before.

Facilities for bacteriological work have been heretofore lacking, and American students in this department of science have been obliged to either carry on such investigations under the greatest possible difficulties at home, or to pursue their studies in the various laboratories abroad. Under such conditions we advance slowly and laboriously and can necessarily take little part in the triumphs of modern scientific research. A thorough knowledge of the causes and modes of propagation of disease, as well as the laws governing epidemics, must be acquired before we can use with intelligence whatever resources which may be placed at our disposal. We can now boast of six or seven private bacteriological laboratories, and there is reason to suppose that, if properly equipped and supported, they will do good and efficient work; yet, to meet the many and varied requirements of our Government, something more is needed. Our National health officials should be enabled to carry on the many kinds of investigations needed without assistance from foreign or outside sources, and such experiments should not be allowed to languish or fail through lack of time on the part of the officers or the need of funds to meet current expenses. In no other way can such sanitary work be prosecuted with success, than by the establishment of a bacteriological laboratory, forming an adjuvant to the Bureau of Health—liberally maintained by the Government and wholly devoted to the needs and demands of the latter. Many countries have set the example. We have only to commend a measure whose feasibility has been so fully established.

There could be no Association whose interests we hold so greatly at heart, as the one with which we are so intimately connected. Its triumphs and successes are no less our own, while for any failures or shortcomings it might manifest, we should hold ourselves in part responsible. We may then rightfully interest ourselves in those measures by

which the aims of the American Medical Association are defined and furthered, and by which its honors and benefits are rendered free to the profession at large. As the official organ of the Association THE JOURNAL should obtain certain special features. We see too many elaborate and scientific articles, and those which are both uninteresting and far from practical. We are too often obliged to spend too much time in eliminating the great mass of verbiage and dry details with which a few plain facts are surrounded. A journal designed for the general medical reader has no right to fill its columns with articles upon optics, or cerebral localization, or pathological anatomy. Contributions which have their own proper place, should not be inflicted on the general practitioner to be read during the limited time at his disposal. The reports of medical societies may be placed in the same category. If they contain anything of special value let it be summarized and allowed no more space than it deserves. The Association does not require a journal which deals with special branches and investigations, but rather one which will give a comprehensive digest of medical progress and medical news, and at the same time possess such features as will render it popular and attractive.

The editor of such a publication should not be chosen without due care and deliberation, as the office is a most important and responsible one. It follows that, in addition to his other qualifications, he should be a man of liberal education, elevated thought and considerable executive ability. He should be able and willing to devote to the office the care and attention which it demands, without incurring the suspicion of having used it for the purpose of furthering his own private and personal interests. What applies to medical journalism as a whole, may be said to represent the needs and requirements of the official organ of the Association, and the realization of projects for its growth and improvement is, no doubt, a source of care and solicitude to all of us. In this, as in all matters which concern the future growth and prosperity of the American Medical Association, our support and loyalty are pledged. It is within our power to add materially to its usefulness and success, while at the same time we endeavor, by all possible means, to improve the present condition of the medical profession by elevating its standards and placing it upon a firmer moral and intellectual basis.

I have endeavored briefly to direct your attention to some of the more striking evils which now exist, and the measures which might be employed to overcome them. We have, at the present time, an important mission to perform, yet no one who fully appreciates the influence and the capabilities of this Society of Medical Editors, can justly despair of final success. We feel to a certain degree satisfied with the work which has already been

accomplished by our Association, and desire to show our appreciation of the evidences of esteem and encouragement which have been extended, yet no thought is more gratifying to us than the conviction that, in years to come, we shall have been found to have added our full quota to the triumphs and achievements enjoyed by the medical profession of America.

ADDRESS OF WELCOME.

BY J. H. ELDRIDGE, M.D.,
OF EAST GREENWICH, R. I.,

The Oldest Member of the Rhode Island Medical Society.

Having reached that bad eminence—the oldest in fellowship of our State Society—an honor which I share with my friend Dr. Turner, who will address you this evening, the Chairman of our Committee of Arrangements has assigned to me the very pleasant duty of greeting you, gentlemen of the American Medical Association, and giving you a cordial welcome in behalf of the profession of Rhode Island on this, Fortieth Annual Meeting, which you have done us the honor to hold in this State.

It goes without saying, that this is a very small State in point of territory. The most extravagant diminutive can hardly convey an idea of its proportions to those of you who come from without the limits of the New England States. We must also admit that the soil in many parts is barren, rough and unfit for cultivation, and in an agricultural point of view worthless. Nearly half its surface of one thousand square miles is in its primitive state of forest or brush-wood; and another large portion is covered by the waters of the bay.

With all this, which we ourselves see and must of necessity admit, and which must be apparent to the casual visitor, we have much in which we take a laudable pride. What nature has denied to us in some ways she has been lavish of in others. We are proud of the illustrious founder of our State and the inheritance of civil and religious liberty which we have received from him. We are proud of our historic record from the first settlement of the State, through all the wars, down to the present time, and of the heroic names which are associated with us and which belong to us. We are proud of this lovely city by the sea, of which so much will be told you by the gentlemen associated with me. We are especially proud of our Bay with its numerous indentations, islands, and headlands sloping everywhere green and fresh to the water's edge. We value very highly the great extent of shore bordering our tide-waters, measured by hundreds of miles, upon which we, the present natives, taught by the aborigines, have learned to depend for our chief supply of food, never failing, all seasons alike, the delicious bivalve of every kind everywhere abounding.

No visitor is permitted to leave this State until he shall have tasted this healthful, delicious food prepared in the primitive Indian way.

This shore privilege, as it is called, is an important feature in our Bill of Rights. All below high-water is public property. If in your efforts to reach this public domain by the nearest route, you should commit a trespass by crossing some private grounds, you may be assured you will only be mulcted in nominal damages—if the trial is before a jury, especially a Kent County jury.

We take an especial pride in our institutions of learning. Our Brown University, our Free Public School system, our Free Public Libraries, in every town—recognized and partly supported by the State, and everywhere doing a good work—continuing and completing what the free school has begun. Nowhere can all this be seen in better condition, more successful operation, than in this good town of Newport.

In our industrial enterprises, to which we are indebted for our prosperity and wealth, our cotton mills, our foundries and machine shops, where you can see the natural fibre—wool or cotton—wrought into the finished fabric; where you can see the construction of the most powerful stationary or locomotive engines and machinery of every kind.

Notwithstanding the poverty of the soil and the rough, rocky surface which so generally prevails, we have some specimens of fancy farming and fancy breeding; and also planting of forest and fruit trees, which plainly show what we might have done if we had earlier turned our attention to these important matters.

All this, and more which I might speak of, is so convenient, so accessible by land or water on either side of the bay, that, in the *horæ subsecivæ*, from the more important affairs for which you are assembled here, you will find abundant opportunity to visit and examine for yourselves.

Among the original settlers and founders of this State were a goodly number of physicians, or surgeons, as they were then more commonly called. Dr. Turner will give you a very full historic sketch of the most prominent of these men in the Rhode Island settlement. Other men of the same stamp, maintaining the same position in the Providence plantations, were associated with them. The respect and consideration which these good men could claim, and which was everywhere granted to them, has been transmitted through many generations of worthy successors, until we of this day are enjoying the goodly fruits thereof.

You have then but to announce yourselves as physicians, as members of this convention, as visitors, delegates from other States or other countries, to find everything opened for your inspection, and to be received everywhere with a cordial welcome.

ADDRESS ON SURGERY.

Delivered at the Fortieth Annual Meeting of the American Medical Association, Newport, R. I., June 27, 1889.

BY PHINEAS S. CONNER, M.D.,
OF CINCINNATI, O.

The surgery of the century has been of three periods: the preanæsthetic, the anæsthetic and the modern one. Operative brilliancy characterized the first. The suffering inseparably connected with the use of the knife and the nervous depression resulting therefrom was to be limited chiefly by celerity of execution; hence, the swift moving hand was an essential part of the equipment of the fittest surgeon.

When, in the amphitheatre of the Massachusetts General Hospital, "the problem of surgical anæsthesia was definitively solved," a new period began. Pain was no more, and it was permitted to examine earlier and more thoroughly, to remove more extensively, and to operate successfully in regions previously altogether, or in great measure, beyond the reach of art. For twenty years or more, progress was in the line of diagnosis, of development of new and better methods of operating, of extension of the range of surgical interference. Time was no longer an element of prime importance, and the work was regarded as quickly enough done when well and thoroughly done—too much so, in fact, for not seldom the best interests of the patient have been jeopardized by unnecessary delay in execution, that would not have occurred but for the existing profound insensibility. But though operations in this anæsthetic period were without much of the terrors of the olden time, they yet fell far short of producing the wished for result in preservation of life and early restoration to health. Wound complications were still as ever the bane of surgery, and too often the wisest planned and best executed operation resulted in failure because of the supervision of one form or other of septic infection.

It is scarcely twenty years since patient investigation, careful experimentation and practical testing began to throw strong clear light upon that most obscure of the subjects of medical study, the causes of disease. As never before in the history of medicine, truly scientific methods of research have been adopted and pursued by a multitude of trained observers in all civilized countries, and surgery has entered upon its scientific period, in which operator and patient are profiting by the labors of the chemist, the botanist, the physiologist, the physician, equally with those of the practical and experimental surgeon. It seems but yesterday when Lister's early papers startled the world. It is but twenty-two years since the first one was published, yet what enormous advances since then in knowledge, in treatment, and in the field of operative interference. A new department of science, surgical bacteriology, has been created (for what was done prior to

1867 may for practical purposes be left out of consideration), and in its development has been worked out the mycotic origin of all those pathological processes looked upon as inseparable from traumatisms, or almost necessarily associated with them if severe. Suppurations, gangrene, septic infection, erysipelas, tetanus, we know to depend upon the presence or the action of one or other of definite organisms that may be isolated, cultivated and inoculated. Recognizing the cause, it has been comparatively easy to devise methods, more or less perfect in action, to prevent the development or neutralize the influence of it, and there has been worked out an antiseptic and aseptic wound treatment, the results of which are simply marvelous. But just here I must protest against the wisdom or the justice of the sweeping declarations of a few enthusiasts, who see in other than speedy recovery after injury or operation evidences of what they are pleased to consider criminal ignorance or neglect.

The existing strong probability that in any given case septic infection might be prevented, has given warrant for the performance of operations that in preaseptic days were not to be thought of.

Abdominal surgery, that so short a time ago meant scarcely more than the removal of an ovarian tumor too often carried until death was evidently fast approaching, now includes operations upon almost every part of each hollow and solid viscus, and laparotomy has taken its place as a safe, proper, and often indispensable prerequisite to the determination of obscure diseases. Penetrating and perforating gunshot wounds, so generally fatal when treated by rest and opium, have in at least forty cases been recovered from after section and suture, and there are now but few surgeons still unconvinced of the wisdom of early active interference. At our last meeting Senn's carefully elaborated and beautiful demonstrations set forth a means of determining the existence and location of intestinal wounds that if safe, as it has thus far seemed to be, will remove the greatest objection to laparotomy in these cases, the uncertainty in the earlier hours of bowel perforation—and prevent what otherwise will occur, the overlooking of one or more lesions. It is not to be expected that all or any close approximation to all of these very dangerous wounds will be saved by early operation, for great injury will ordinarily be produced by the bullet, be it large or small; but every case that recovers after section and suture may fairly be considered as rescued from an otherwise almost inevitable death. Unquestionably the laying open of the peritoneum and operating upon an abdominal organ has at times been carried too far. Useless work has been performed, and life has been sacrificed, for it is not true (so far certainly as operators in general are concerned) that abdominal section is in itself

without danger, doing no harm if it accomplishes no good. But not a day goes by that somewhere or other life is not prolonged and comfort secured by an intraperitoneal ligation, suture, anastomosis or excision, rendered proper, may we not say possible, only by the aseptic results of scientific discovery and experimentation.

So, too, the diseases and injuries of the other great cavities are being attacked by the surgeon's knife guided by the diagnostic knowledge, the localizing exactness and the technical skill of the physician, the physiologist and the vivisector.

There has been but a beginning of intrathoracic surgery, though for years empyemas have been treated by free incisions, supplemented not seldom by extensive excisions of portions of the chest wall, and even in preaseptic days deeply lodged foreign bodies were removed. Only very recently has the lung been cut into for the evacuation of abscesses and the treatment of gangrenous areas, such pneumonotomies resulting favorably in one-half of the reported cases; and as yet but few subpleural tumors have been attacked. There is every reason for believing that in the near future surgery will be able to render great service to the subjects of not a few forms of thoracic disease now regarded as beyond the reach of art.

The most recent and the most brilliant triumphs have been in the treatment of diseases and injuries of the brain and cord. Nowhere else have our art and science so joined hands in affording relief as here. Tumors removed, foreign bodies taken away and their tracks drained, convulsion-centres excised, serous effusions tapped, life preserved and comfort secured; so reads the record. Much remains to be done in the determination of the trouble, the exact localization of the mischief, the perfection of technique. Not seldom mistakes will be made, errors committed; but it will be more and more demonstrated that the trained mind and the skilful hand, working together, can recognize and successfully treat otherwise irremediable affections within the skull and the spinal column.

As the operative procedures necessary for the exposure and removal of the spinous processes and laminae of the vertebrae are but little dangerous, and as septic meningitis can almost certainly be prevented, a change may reasonably be looked for in the treatment of vertebral fractures, especially those in the lower half of the column. Up to this time the cases in which active interference has been made have almost always been those of long duration, in which existing inflammatory changes in the cord, if nothing worse, could not but prevent any favorable result; but even in these, of late, the patient has been none the worse for the operation. Without doubt, early removal of pressure, whether made by bone or blood it matters not, would save many an one from all those deplorable conditions consequent upon my-

elitis with which we are unfortunately too familiar.

Is there any good reason why spine fractures should not be treated as skull fractures? and who would now for a moment think of rest and position as the routine treatment of the latter injuries?

But in this scientific period there has been much more accomplished than extension of the range of operative interference, great and important as this has been. As never before it has been possible to preserve damaged parts and to retain important functions, to replace completely detached pieces of bone and secure adhesion as perfect as of the fragments in a simple fracture, to transfer large areas of integument and ingraft pieces of bone, to supply deficiencies in soft or hard parts by skin or bone from dog, rabbit, chicken or frog. Every department of conservative surgery has been and will yet more be benefited by the preventing of the evils consequent upon the action of minute organisms.

The two diseases that produce the widest destruction to part and to life are tuberculosis and cancer. The former, that until the discovery of its causative bacillus was regarded as of rare occurrence in parts belonging to the domain of surgery, is now known to be the producer of the vast proportion of the diseases of bones and joints, and of many of those attacking the skin and more external organs.

Primarily and often for a long time local, if allowed to go on unchecked, it effects other and remote regions, perhaps rapidly becoming generalized. But what has been learned respecting it—that it may attack any part the blood circulation in which is disturbed by general enfeeblement or local injury of ordinarily not severe character; that the bacilli may be destroyed or become encapsulated; that the softened tissues may, in like manner, be taken up and carried off or shut in temporarily or permanently; that if the diseased focus be completely removed, as it often may, the part and the whole are as if it had never existed, except so far as function is disturbed by the loss of what has been taken away, and by the scar tissue resulting? How has treatment been affected by this knowledge? It is of prime importance that early diagnosis be made. Located in bone or joint and detected while yet limited, prolonged rest, as absolute as possible, will in the majority of cases, certainly in young subjects, secure destruction, absorption or encapsulation of organisms or affected cells with resulting restoration to health. Advanced to the stage of caseation and liquefaction, rest may yet be followed by recovery, though ordinarily free drainage, with or without associated removal of the infected tissue, will be of great advantage. Injection of agents such as iodoform or the acid phosphate of lime, that will destroy the bacilli and the tuberculous masses, may produce the wished for cure. But ordinarily it will be better, indeed generally

necessary, to remove the affected area either by formal or informal excision or by amputation. Whether diseased joints are best treated by arthroscopies or by typical excisions is one of the questions still *sub judice*, though in the last three years, as never before, it has been shown that formal removals of the larger articulations can, in a large proportion of cases, be followed by early repair and solidification without suppuration or constitutional disturbance; even at times with recovery of original function. Though it is not likely that it can ever be said with truth that the days of the lame and the hump-backed have gone by, because of neglect, delay, or generalization of the pathological process, yet we have good reason to believe that further advances in knowledge of the development and extension of the tuberculous disease will enable the surgeons of the future to so limit, ameliorate and cure the surgical tuberculous affections, as that they will no longer constitute one of the most important and destructive of the external diseases.

Of cancer it may with truth be said we know very little; yet of nothing do we more need knowledge. Much less often met with than tuberculous disease, it is yet of not infrequent occurrence. In our eight largest cities (Boston, New York, Brooklyn, Philadelphia, Baltimore, Chicago, St. Louis, and Cincinnati) during the five years ending Dec. 31, 1888, of 599,684 deaths from all causes 13,094 were from cancer, 2.18 per cent., and as we all know the disease is not peculiarly an urban one. In five of the eight cities, New York, Chicago, Cincinnati, Brooklyn and St. Louis, the death rate was much the same, being in the order given 2.1, 2, 2, 1.94, 1.93 per cent. In Boston it was highest, being 2.98 per cent.; in Baltimore it was 2.4 per cent., and in Philadelphia 2.28 per cent. In Cincinnati in the last year the percentage reached 2.6 per cent., while in 1868 it was but 0.55; an altogether exceptional rate, however, as only once since has it fallen below 1 per cent., in 1870, when it was 0.8. For these figures I am indebted to the health officer, Dr. Stanton. One in fifty then of the deaths in an aggregate city population of over five millions is due to this disease, and if we have regard only to the mortality of those within the cancer age, *i.e.*, more than 35 years old, about one in twenty of the deaths is thus produced. Even among the carefully selected adult individuals carrying life insurance, who are free or are supposed to be, from family predisposition to cancer, from 2.5 to 3.5 per cent. of the mortality is from this disease. The statistics just mentioned and, particularly the marked contrast between the high death rate in Boston and the low one in St. Louis, gave but little support to the theory of Haviland, that low lying lands subject to frequent overflows are those in which the disease is most prevalent.

In preparing the mortality statistics of the census of 1880, Dr. Billings found that the disease was most prevalent in New England and Southern California, and least so in the South and upon the Mississippi. It is to be hoped that in the preparation of the vital statistics of the next census such attention may be given to this subject of occurrence and distribution, and such full and complete reports secured as will add materially to our knowledge, and go far towards determining to the correctness or incorrectness of the views of the English writer named. Care should be taken to separate, if possible, cases of sarcoma from those of cancer.

Hirsch to the contrary notwithstanding, this affection is becoming more common throughout the civilized world, certainly is so in our own country and in Great Britain. Increased accuracy of diagnosis will not account for a doubling in twenty years of its mortality rate in Massachusetts or in Cincinnati, or in less than twice twenty years in England. Frequently, if not usually, attacking individuals in good general health (though oftentimes appearing soon after a period of marked mental anxiety and depression), it has regard neither to social conditions nor hygienic surroundings. Unlike consumption, which is often of limited duration ending in recovery and at the worst, ordinarily bringing death gently, cancer left to itself very rarely is spontaneously eliminated, is almost inevitably destructive to part and to life, and is often attended with severe physical and mental suffering.

What is its starting point. An unused long-dormant embryonic cell, at length aroused to activity by local irritation, general enfeeblement or nervous exhaustion? In all probability, no. An abnormal epithelial development, abnormal because unconfined within its normal limits? But why unconfined. An epithelial cell undergoing proper degenerative changes, but arrested at some point short of its complete alteration? What stops its retrograde movement. Is it of mycotic origin? That it should be so would hardly be more strange than that lupus or lepra should be. That it is so has not yet been proved. The many investigations that have been made, some of them for a time apparently fruitful, have thus far failed to discover a causative bacillus, unless further and extended cultivations and inoculations shall prove that Kubasoff has actually found it. Experimental inoculations have again and again produced nospecific result, but Lampiasi has claimed that by using a bacillus culture from the blood he succeeded in causing in a healthy part of the patient's skin the growth of a nodule having "an alveolar stroma with wide meshes, which contained many epithelial cells of different form and sizes;" and Hanan has twice successfully transplanted from rat to rat.

No more inviting field is open to the bacteri-

ologists and experimenters of our country (and we have a number of them, as also well equipped laboratories), than this very one of cancer. Cases are numerous, specimens are being daily secured, and there is no reason why America should not now do full part in settling the vexed questions of nature and origin. The imperative necessities of a struggle for existence, and the intense practicality of a new and developing country have heretofore prevented any but the very few filled with enthusiasm or independent of fortune from engaging in purely scientific studies involving minute investigation and patient labor with often no apparent practical outcome. But the times are changing, and the profession of our country may, and doubtless will ere long be as well and favorably known in biological research as it has been, and is in relation to ovariectomy, to ether, to the hip, to the treatment of stone, to the surgical diseases of women, to abdominal section, to a multitude of affections, and the means of treating them.

As we see it in lip or breast, or uterus or stomach, or it matters not what part or organ, is cancer a local disease, or but a local manifestation of a constitutional state? The question is still an open one, though the great majority of pathologists and clinicians are now agreed that wherever seated it is primarily, and for a time purely local, whatever may be the general conditions inherited or acquired that permit or favor its development. If not of limited area and capable of complete removal, operative interference can be justified only on the ground of affording temporary relief—unfortunately all that is accomplished in the majority of cases submitted to the knife. But there is great encouragement in the knowledge that a certain percentage of patients operated upon do recover; that is remain free from recurrence for three or more years; and that this percentage is larger or smaller, according as the disease is so situated as to be early detected and thoroughly removed, or the contrary. Located in the lower lip or the cervix uteri, for example, two out of five patients operated upon get well, in the breast one in eight. Why this great difference. Because, we may believe, of the site itself and of the degree and rapidity of extension, in parts immediately adjacent and of glandular involvement; in other words, of the likelihood of early and the possibility of complete extirpation, or the opposite. How are to be regarded those cases in which after five, ten or twenty years of apparently perfect health, the disease again shows itself and destroys life? As of long quiescence of infected and infecting cells or of a new and independent affection. The latter explanation certainly makes a far less demand upon our credulity, and it is no more strange that there should be a second than a first attack in a person and tissues possessing and undetermined and

unknown receptivity, and such there certainly must be that cancer may be developed at all.

Of nothing are we more certain than of the immense advantage there is in early recognition and speedy removal; and, on the other hand, of the utter uselessness, so far at least as the ultimate result is concerned, of any surgical interference after a wide extension has taken place.

In perfecting, therefore, the means of establishing diagnosis at an early day lies an important work in the future. Though consideration of age, of location, of pre-existing long-continued irritation, go far towards settling the nature of a given tumor, and upon such estimation of probabilities action may generally be safely taken, yet, as a rule, certainty of the character of the growth can only be had after scientific determination of its anatomical constitution. Whatever then makes it possible to safely, easily and without pain remove for microscopic examination, a sufficiently extensive piece of the mass to show its deep as well as superficial structure is of much practical value. A convenient and promising little instrument has lately been given to the profession by Dr. Collins Warren, of Boston.

Physiological and chemical investigations have furnished us with early and reliable evidence of the existence of cancer of the stomach in absence of the hydrochloric acid from the secretions of that viscus; may not kindred investigations give us like aid when other organs are affected?

The modern and scientific wound treatment now enables the surgeon to remove more extensively and at the same time safely, so that active interference may reasonably be expected to be, and is attended with much better results, than could be looked for a few years ago. Much of the work, though that in the last decade has been done upon internal cancers, has been of questionable utility: chiefly because of its late performance.

What will the future reveal respecting the non-operative treatment? Will a drug or drugs be found to secure destruction and removal of the morbid mass? May the moderate continued electric current or powerful interrupted currents "flashed through" prove to produce as has been claimed for them, entire disappearance of the diseased cells? Can some pathogenic organism be inoculated that without killing the patient will break down the malignant growth? We all know what has been done with the micrococcus of erysipelas.

In nothing could this Association do more than in determining by collective investigation and thorough committee work the frequency of occurrence of carcinoma in the country as a whole, and in its several States, the relation borne (if any) to geological formation, the age of appearance, the relative affection of parts and organs, the influence of therapeutic treatment, and the duration of

life with and without operation. Five years of such work would suffice to accumulate a mass of statistics of very great value, the study of which could not but advance the best interests of patients and practitioners; and in this, as in everything else "many hands make light work." To physicians, surgeons and therapeutists, the subject is one of prime importance, and only by combined scientific and practical work can it be determined what excites and produces the disease, and what can secure its relief.

As we survey the advances, etiological, diagnostic and therapeutic, made in the few years just past, that are of the scientific period, and consider, even in the most hurried way, the problems that are yet awaiting solution, problems relating to nature, origin and treatment of the diseases and injuries of parts within the domain of surgery, what may we not reasonably anticipate as the future of our science and art. Accidents must occur, diseases will prevail, no matter how great the triumphs of preventive medicine. Surgical pathology is but in its infancy. Years ago it was declared that operative surgery had reached its climax. Yet, since then, operations have over and again been done within abdomen, chest, and skull, upon the larynx, throat and spinal cord that in boldness of conception and brilliancy of execution have no parallel in the history of medicine. The end is not yet, nor will it be while, the world over, there are active minds and cunning hands busied with the determination of the existence and extent of surgical affections, and ready and able to remove them, aided more and more by the labors of investigators in many departments of science, general as well as medical. Year by year, he who may deliver the Address on Surgery will be able to report doubts removed, discoveries made, remedies employed and operations done.

ADDRESS OF THE CHAIRMAN OF THE SECTION ON THE PRACTICE OF MEDICINE, MATERIA MED- ICA AND PHYSIOLOGY.

*Delivered at the Fortieth Annual Meeting of the American
Medical Association, June 25, 1889.*

BY FREDERICK C. SHATTUCK, M.D.,
OF BOSTON.

In obedience to the rule of the Association that the Chairman of each Section shall review the progress which the year has brought in those subjects which immediately concern his Section, I ask your attention to a very brief consideration of a few of the large number of topics which might worthily find notice here.

The practice of medicine, materia medica and physiology include so much, the workers are so many, and the fruits of their labors are so varied

and abundant that the difficulty of selection is itself an embarrassment.

The grass had scarcely grown on the grave of the treatment of pulmonary tuberculosis by gaseous enemata before another curative method was advocated by Weigert¹, Halter², and Krull;³ a method which would seem at first sight to have claims to be called curative in that it is designed to remove the cause of the disease by destroying the bacilli *in situ*. We know that the development of this particular microbe is arrested at a temperature of 107° F.; and if, then, the intra-pulmonary temperature can be raised to or above this point and there maintained for a time the happiest results must follow. I can confirm the statements of the originators of this method as to the ability of patients to breathe with impunity air at a surprisingly high temperature. I have myself inhaled it at 320° F., and seen patients inhale it at 428° F., without notable inconvenience. Nearly six months ago Dr. G. G. Sears, of Boston, began to practice inhalations of hot air on some of my patients in the House of the Good Samaritan. His results are now ready for publication, and it will suffice to say here that an apparatus was used devised by Mr. G. L. Kingsley, of the Harvard Medical School, an apparatus which can be made by any coppersmith for \$5—that patented by Weigert costs in this country \$75—and that we are satisfied that the problem of intra-pulmonary direct germicidal action is still unsolved.

The pancreas, an organ the diseases of which have been until recently of pathological rather than clinical interest, is being dragged from obscurity. Senn's work on cysts of the pancreas is followed up by Fitz,⁴ who has collected 70 cases of the several forms of acute inflammation of the organ and subjected them to a rigid analysis, which yields a notable increase to our knowledge. A frequent cause of acute pancreatitis seems to be the extension of an inflammation from the duodenum into the pancreatic duct and thence to the interstitial tissue of the organ; which tissue stands in such relation to the peritoneum, the retroperitoneal and retropancreatic fat tissues, as to permit the ready passage of bacteria, and thus account for the peritonitis and disseminated fat necrosis so often resulting from pancreatic inflammation. Inflammation of this organ is doubtless much more common than has hitherto been generally supposed, and is not impossible of diagnosis. The affections with which it is most likely to be confounded, are, irritant poisoning, perforating gastric or duodenal ulcer, perforation from gallstones, and acute intestinal obstruction. The first three can be excluded by the history of the case

¹ N. Y. Med. Record, 1888, ii, p. 693.

² Berl. Klin. Wochenschrift, 1888, Nos. 36-38.

³ Berl. Klin. Wochenschrift, 1888, No. 39.

⁴ The Middleton Goldsmith Lecture for 1889. Boston Med and Surg. Journal, 1889, pp. 181, 205 and 229.

and the associated symptoms; the last by determining the potency of the large intestine through injection, by the seat of pain and tenderness of the upper abdomen, and by the absence of marked tympanites. I trust that I may be pardoned here for bringing in my own personal experience, which I do with the less hesitation, inasmuch as it is not especially to my credit. It was my lot during the past winter to be one of six physicians and surgeons at a consultation; four of us considered the case as probably acute intestinal obstruction, one inclined to perforation, while Dr. Fitz alone held that it was acute pancreatitis, and advised against operation. Laparotomy was done, no obstruction was found, and multiple fat necrosis was seen in the omentum, and the autopsy revealed acute hæmorrhagic pancreatitis.

Frerichs⁶ long ago noticed the frequency of atrophy of the pancreas in diabètes mellitus; and Lancreaux in a recent and important paper calls attention to the relation between these conditions, based on 20 cases which he has seen, with post-mortem verification in 14 of these. Pancreatic diabetes, in contradistinction from the other forms of the affection, is characterized by sudden onset, rapid course, and severity of the symptoms, with great emaciation. In two of the cases, by the way, epigastric colic lead to the diagnosis of pancreatic calculus, and the autopsies brought justification.

Here we may allude to the experiments of Pavloff and Smirnoff,⁷ which show that in rabbits, whose pancreatic ducts have been ligated, regeneration of the gland may take place after a new and spontaneous communication with the intestine has been formed.

The much vexed question as to the nature of diabetic coma, with the indications for the liability of its occurrence in any particular case, and the means for its relief are ably considered by Kirstein,⁸ who details the steps through which our present knowledge has been attained. In certain cases of diabetes the organism seems to have lost the power of burning the fatty acids, largely β -oxy-butyric acid, to their normal end products. These cases are characterized by a large increase in the amount of ammonia in the urine, rather than by any striking symptoms or complex of symptoms, and these are the cases in which coma is to be dreaded; this form of coma being the result of the formation of larger amounts of free acid than can be neutralized by the ammonia which the organism is capable of supplying, the consequent abstraction from the blood of the fixed alkalies, and thus toxæmia.

The quantitative estimation of ammonia in the urine of diabetics is consequently of great importance therapeutically as well as for prognosis; but

unfortunately a method for this estimation readily applicable to clinical purposes, is still lacking. When this large excess of ammonia is found the indications are to restrict the acid—rather than the sugar-forming foods, meats for instance—and to give alkalies freely. On the advent of the peculiar dyspnœa, which is apt to be the first symptom of coma, alkaline intravenous injection is to be practiced, as has already been done in a small number of cases, Minkowski alone having saved his patient.

The diseases of the blood have been studied by Graeber, Hunter, and others. According to Graeber⁹ anæmia, chlorosis and pernicious anæmia are distinguishable from one another by a count of the red corpuscles and a hæmoglobin estimation. Hunter¹⁰ argues to show that pernicious anæmia is an entity, pathological and clinical; depends on increased blood destruction, probably in the liver; and is to be differentiated from all grave anæmias, as, for instance, those of cancer and intestinal parasites, as well as from all other primary anæmias, by the greatly increased amount of blood pigment, responding to the micro-chemical tests for iron, found in the liver in this affection. The spleen contains no such excess of iron as does the liver; and, in the latter organ, the seat of the pigment is chiefly the outer portions and cells of the lobules, not the capillaries, a fact which goes to show that the blood destruction takes place in the liver itself, the pigment entering the cells in soluble form—hæmoglobin—and there undergoing conversion into albuminate of iron. In all cases where the blood destruction takes place elsewhere than in the liver, and pigment is deposited in that organ, it accumulates in and about the capillaries.

A paper of MacMunn,¹¹ of Wolverhampton, on Addison's disease is noteworthy. He has studied the adrenals and urine of patients with this disease, spectroscopically; and, reviewing our knowledge of the subject, concludes that the function of the adrenal bodies is the removal from the circulation of worn-out pigments and their accompanying proteids. "When the adrenals are diseased these effete pigments and effete proteids circulate in the blood; the former, or their incomplete metabolites, producing pigmentation of the skin and mucous membrane, and appearing often in the urine as urohæmatoporphyrin; the latter producing tonic effects, and leading to further deterioration of the blood with its consequences."

At our meeting in Cincinnati, last year, a discussion took place on the modern method of diagnosis of diseases of the stomach; and high hopes were expressed that by the examination of the gastric contents, an ease and certainty of diagnosis in these affections is almost within our reach

⁶ Bull. de l'Acad. de Médecine, 1888, Tom. xix. 3 Sér. p. 588.

⁷ Lancet, 1888, i. p. 999.

⁸ Deutsch. Med. Wochenschrift, April 11 1889.

⁹ Fortschritt der medicin, July 15, 1888.

¹⁰ Practitioner, Aug., 1888, and Lancet, 1888, Sept. 22, 29 and Oct. 6.

¹¹ British Med. Journal, Feb. 4, 1888.

comparable to that which urinary analysis yields in renal diseases. The more carefully the question is studied, the greater is the demand for yet further study, and the more clearly does the necessity appear for the exercise of great caution in the formation of definite conclusions at present. In the first place, it is now seen that the only single test for free hydrochloric acid which has a real clinical value, is the phloroglucin-vanillin; the tropæolin, congo red, methyl violet, and other tests, either reacting to other acids or acid salts, or being often prevented from reacting by albuminoids, even when free hydrochloric acid is present. Secondly, it gradually appears that it is not safe to base a diagnosis of gastric cancer on even the persistent absence of this acid from the gastric contents withdrawn an hour after a test meal. Such absence is indicative of notable impairment of the functional activity of the mucous membrane, as from a severe catarrhal condition; or of extensive destruction of the secretory glands of the stomach, largely irrespective of the cause of the destruction. Thus, in a case of cancer sharply localized and unaccompanied by catarrh to any marked degree, free hydrochloric acid may be found in sufficient amount until the cachexia is well advanced. On the other hand, in severe but simple catarrh, especially if attended by the formation of much mucus; in atrophy of the gastric tubules; in amyloid disease of the organ; after strong caustics have done their work; even in certain cases of impaired innervation; no free hydrochloric acid may be detected, though sought for repeatedly with the utmost skill and the aid of every appliance and reagent.

It also appears that hyperacidity though a frequent, is by no means a constant accompaniment of peptic ulcer.

Indeed it is impressed upon us that the pathology of an organ which varies so widely physiologically in the same individual within such short periods of time is a very complicated thing and the lesson is again enforced that it is not in pathognomonic signs, but in careful weighing of each piece of evidence and in the painstaking collocation of them all that accurate diagnosis is to be attained. Before leaving this subject I must say a word in praise of Ewald's remarkable work on *Diseases of the Stomach*,¹¹ and of the balance which he preserves while enthusiastically pursuing his subject.

During the past year the internal antipyretics have continued to seek their level. It is seen that they exert no curative influence on specific febrile processes; and, as we recognize more and more clearly that even continued fever is not productive of the changes in the parenchymatous organs with which we credited it of late years, but that the danger in these processes lies rather in the effects of toxic alkaloids on the nervous centers

than in temperature elevation, as we recognize this fact, we appreciate how irrational it is to address our therapeutics chiefly to pyrexia. When the fever is in itself productive of discomfort to the patient the internal antipyretics are useful; but the indications seem to me, at least, strong that the antineuralgic and analgesic will survive the antipyretic application of this class of drugs.

On the other hand, it seems probable that the cold-bath treatment, if continued, and especially of typhoid fever, must be adopted and conscientiously carried out in this country. As the principles of Brand's methods gain headway in France, a country not prejudiced in favor of German leadership, as Brand's results are confirmed by other observers, and in other countries, and in the face of such statistics as are put into our language by H. C. Wood,¹² Wilson,¹³ and Baruch,¹⁴ it is difficult to see how a people who prides itself on its wealth, general intelligence and practical qualities can be longer deterred by skepticism, or motives of convenience and economy, from the adoption of a method of treatment which reduces the mortality of typhoid fever to 3 per cent.

The hypnotics, sulphonal and amylene hydrate, have come into more general use, and prove themselves to be valuable additions to our list of remedies of this class. Unpleasant effects seem rare, while the slow absorption of the one, and the rapid action of the other give each a place.

The treatment of locomotor ataxia by suspension [accidentally hit upon by Motchonkowsky, of Odessa, who was struck by the benefit derived by a tabetic patient, also suffering from spinal curvature, after the suspension required in applying a plaster jacket] has spread with great rapidity, and is being thoroughly tested in this as well as in other countries: It is still too early to determine how useful it will prove to an unfortunate class of patients.

Morton Prince¹⁵ was led by his duties as examiner of applicants for the Boston Fire Department, and by the frequency with which he heard temporary murmurs in vigorous men, to a study of their mode of origin. It has been believed for some years that in debilitated states leakage may take place through the mitral valve, the curtains of which are not tightly closed by reason of the insufficient force of the ventricular contraction. It will be at once appreciated that Prince's cases were the reverse of debilitated; and his ingenious explanation of the murmurs heard in them is that under conditions of great excitement, such as many of the applicants presented, the valve may be forced by ventricular contractions of a power disproportioned to the resistance of the valve. It is not easy to detect a flaw in his argument,

¹² *Therapeutics, Its Principles and Practice*. Seventh Ed., 1888, p. 55, et seq.

¹³ *Annual of the Med. Sciences*, 1889, Vol. i.

¹⁴ *N. Y. Medical Record*, 1889, i, p. 434.

¹⁵ *N. Y. Med. Record*, 1889, i, p. 421. *Boston Med. and Surg. Journal*, 1889, p. 109, et seq.

¹¹ *Klinik der Verdauungskrankheiten*, Ed. ii, Berlin, 1888.

and it seems as if he had made an important addition to our knowledge.

There are many other subjects of which I should like to speak did time permit and were the programme less attractive. Very likely another in my place would have selected quite a different series of topics. The highly-important and interesting subject of cerebral localization, for instance, has not been mentioned. But the work which has been done in that direction the past year has been rather in popularizing previous studies, and in the application of their results to practical surgery, than in new discovery.

Prudden's¹⁶ studies of diphtheria and the constancy with which he finds a streptococcus in diphtheritic lesions deserves more than passing mention. So also, Hare's¹⁷ Fothergillian Prize Essay on "Mediastinal Diseases."

To sum up the results of the year, it may be stated that it has been one of real, though not of brilliant progress. Knowledge has been advanced almost all along the line, more in some parts than in others; bacteriology in its broad sense, including the chemical poisons generated by or accompanying the microbes, as well as the identification and life history of the organisms, offering an enormous field for patient research.

One fact seems to me to stand out in strong relief, namely, that our countrymen are on the high-road leading to the attainment of a reputation for scientific research equal to that which they have long enjoyed in the more immediately practical branches of medicine and surgery:

The future glows with a promise which the achievements of the past assure us will be realized, and it is the part of each one of us, if he cannot discover, at least to do all that in him lies to make the highest and best use of the discoveries of others more gifted than himself.

ORIGINAL ARTICLES.

TWO CASES OF UPWARD DISLOCATION OF THE STERNAL END OF THE CLAVICLE.

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The comparative rarity of this dislocation, Hamilton¹ mentioning but eleven cases, may justify the publication of the following cases:

Case 1.—Jas. Davidson, æt. 41, a native of Scotland, was admitted to the U. S. Marine Hospital, New York, on October 16, 1888, for necrosis of the frontal bone. In examining the patient it was found that he had an old upward dislocation

of the sternal end of the clavicle. The patient stated that in 1881 he fell from a wagon, striking the wheel with his right shoulder in falling. Though severely jarred for a few moments, he felt no severe pain in the shoulder or sternal region, and was not obliged to consult a physician. A machinist by trade; in resuming his occupation the day after his fall, he noticed that in hammering with his right arm he would often miss hitting his chisel fairly. So aggravated did this condition become that he was discharged as incompetent.

Thinking that the accident might have caused his trouble, he consulted a physician some two weeks after the fall, and was informed that the collar bone was dislocated, but that it was too late to do anything to benefit him. As his right arm was apparently as strong as the left he secured employment on a vessel.

The arm has always been servicable. Examination of the chest showed a slight prominence of the sternal end of the right clavicle, that was increased when the arm was extended above the head. If the arm was extended posteriorly there was a slight projection of the bone forward. If the arm was extended anteriorly there was a marked projection of the extremity of the bone, and a knotting of the pectoral muscles beneath it. Moving the arm to the opposite shoulder, the bone glided along the upper margin of the sternum, and could be made to almost touch the opposite clavicle. No movement of the head affected the position of the bone. As the motion in hammering, with the machinist, is largely from the shoulder, there was constant motion of the dislocated extremity; and failure of the pectoralis to have a proper base of support, made the contraction of that muscle in depressing the arm irregular, and hence the failure to strike a true blow with the tool.

The extreme mobility of the sternal extremity leads to the belief that there was originally a laceration of all the surrounding ligaments. There may be partial reformation of the costo-clavicular ligament, but it seems probable that the bone is now held *in situ* by the subclavius muscle.

Case 2.—O. Anderson, æt. 39 years, a native of Sweden, was admitted to the hospital April 10, 1889. During a storm at sea, on April 7, a heavy wave struck the vessel he was employed on, and he was thrown against a bulwark; he was unconscious for some time, and on regaining his senses felt a severe pain in his right shoulder and arm, and spit up blood. When admitted to the hospital, a fracture of the right ulna was found. There was emphysema of the right chest, axilla, and shoulder. The right post clavicular fossa was obliterated, and crepitation occurred on pressure here, as well as to the external to the scapula. From this and the pulmonary hæmorrhage a fracture of the ribs posteriorly was diagnosticated,

¹⁶ Am. Jour. Med. Science, March and April, 1889.

¹⁷ Philadelphia, Blakiston 1889.

¹ Fractures and Dislocations. 1884. Page 671.

though the site could not be determined as it was covered by the scapula. The sternal extremity of the right clavicle was dislocated upward, and rested on the upper margin of the manubrium sterni; by pressure it could be reduced, but it would gradually slip upward and forward again.

The condition of the patient was such that any attempt at fixation of the dislocated bone was precluded. The patient was kept on his back for two weeks, the fracture of the forearm securing immobilization of the arm. When allowed to sit up the arm was placed in a handkerchief sling, and on May 6, he was discharged recovered.

The sternal end of the clavicle projected, but there seemed to have been a partial reformation of the ligaments, and the range of mobility, of the dislocation was slight. Of course, with constant use, it is possible that the dislocation may be aggravated, but it is improbable that the use of the arm will be interfered with.

These cases simply verify the reported cases: that retention of the dislocation is practically impossible, and that in no case did it impair the usefulness of the arm. Each of the cases were verified by the staff of the hospital.

MEDICAL PROGRESS.

BACTERIA IN GREEN SPUTA.—The occurrence of green sputa is a well-known fact. Formerly all such cases were described by the same name, the green coloring substance was declared to be biliverdin, and in all cases where green sputum was observed, "bilious pneumonia" was diagnosed. At Traube's instigation Nothnagel investigated this symptom in the sixties. He arrived at the conclusion that green sputa might originate either from actual admixture of bile coloring substance into the sputa—and this occurs every time when an affection of the respiratory apparatus accompanied by spitting exists with icterus, irrespective of the cause for the latter, consequently not only in pneumonia but also in common bronchitis—or from transformation of a blood coloring matter into a green coloring substance. Nothnagel, who declares that the rust-color of the pneumonic sputa is an early stage of this transformation process, found the last stage, the green color, when the sputum was allowed to remain stagnant for awhile; for instance, in pneumonia terminating in abscess of the lungs, and in subacute catarrhal pneumonia. Later Elliot and Janssen observed a green sputum evidently belonging to this second category in a case of sarcoma of the lungs.

Attention has repeatedly been called to the fact that there are sputa which immediately after expectoration do not show any traces of green color, but which in a few days assume a beautiful green

color. Escherich, Curschmann and Rosenbach have described such sputa. A similar process, in which, however, a yellow color takes the place of the green, was described by Löwer and Traube. The fact that such coloring occurred chiefly in summer, generally wandering in hospital wards from one cuspidor to another, suggested the action of microorganisms as a cause. Especially Rosenbach claimed bacteriological origin for it. Under the microscope he found in his sputa numerous ovoid bodies, small and glittering, which he regarded as bacteria spores. These he thought were the causes, and at the same time the carriers of the coloring substance.

Curschmann, who also investigated the subject, found no trace of bacteria. Nor has thorough examination of this subject, on the basis of our present attainments in bacteriology, ever been made.

Dr. Fricke finally availed himself of an opportunity to do so during an epidemic of green sputa which occurred in the Canton Hospital in Zurich in the spring of 1888. The sputum of a patient with chronic bronchitis had been taken from the medical male ward to the laboratory for the purpose of microscopical investigation. In three days it had assumed a bright green color. Later the sputum of the same patient became green once more, this time in the ward. A few weeks afterwards the patient had to be transferred to the surgical male ward because of hernia, and a few days afterwards the green sputum of a tuberculous patient who had been operated on in the same ward for empyema was shown to Dr. Fricke. It is just possible that there was an etiological connection between the two cases, although the two patients were not in the same room. At about the same time a green sputum from an incipient case of phthisis in the female ward was submitted. The sputa of this last patient for six weeks became green every time that it was left standing for a few days; afterwards the phenomenon suddenly disappeared. Finally one more sample of a sporadic case of green sputum was sent to Dr. Fricke.

At first Dr. Fricke made attempts at vaccination. Into the sputa of various diseases he introduced traces of green sputa, and in two or three days obtained a green color in the former, it making little difference in what disease they originated. Pneumonia sputa turned almost without exception a dark olive-green, sputa of bronchitis assumed a grassy color. Watery or foamy sputa colored badly, and sputa from cavities colored the worst of all. In short, the tendency to change appeared to depend principally upon the physical qualities.

These experiments already proved almost with certainty that microorganisms were the cause of the color. Dr. Fricke now examined all these sputa by means of Koch's plate cultures, and

found in all of them, without exception (besides diverse bacteria which did not produce any coloring matter, and to which he consequently paid no further attention), the same bacillus which upon artificial soil produced a shining green coloring substance, and which, transferred from the pure culture to sputa, produced in them the green color as regularly as the original sputa. Fricke considers, therefore, this bacillus as the only cause of the green coloring substance.

For the non-success in vaccinating certain sputa physical, chemical or bacteriological causes may be held responsible. By the latter Fricke refers to primary occurrence of such bacteria in sputum which do not harmonize with the coloring bacillus, which are antagonistic to the latter. He examined the conduct of the tubercle bacilli in this respect, and found that sputa containing the tubercle bacilli turn green the same as others. He therefore ascribes no clinical significance to the occurrence of the green coloring, as it depends solely upon qualities of the sputa wholly unimportant clinically, and upon the purely accidental entrance of the bacillus. The latter is about the form and size of the typhus bacillus, and having the same brisk motion. It is strictly aerobic. It has no pathogenic qualities.

The coloring substance is not in the bacilli proper, but in the culture media in their vicinity. The production of the coloring matter is not a vital function of the bacillus, Dr. Fricke being able to raise rather a luxuriant growth of them on artificial soil without their producing the coloring substance. It is difficult to obtain the coloring matter in large quantities and still more difficult to produce it in its pure state, as it is insoluble in alcohol, ether, chloroform, etc., but dissolves easily in water and alkali, and is therefore not easy to separate from salts. For this reason an analysis could not be made.

Supplementary to this question Fricke studied all bacilli producing green color which he could obtain. He had cultures sent him from the institutions in Göttingen and Berlin, and thus was able to cultivate beside one another seven different bacilli, six of which produce, when fresh, a shining grassy-green coloring matter; when old, a dirty yellowish-brown color substance which, however, always retains a beautiful green fluorescence, whilst the color substance of the seventh, the *bac. pyocyaneus* β of Ernst, is at first similar to the other, but through shaking with oxygen or through standing for a long time in the air, becomes dark green and finally almost black. The two coloring substances also differ in their relations to acids. The β substance turns red like litmus, the α matter is completely deprived of color. Alkalies restore to both the original green color.

Three of the seven bacilli dissolve gelatine; they are all known: *Bac. pyocyaneus* α , β , and

B. fluorescens liquefaciens. Four leave the gelatine unchanged; of these two are movable, two immovable. These differ again in the form of the colonies on the different media. Of the bacilli not dissolving gelatine two are identical with descriptions in the literature: that out of sputa with *Bac. fluorescens putidus* auct. (Flügge), another with *Bac. fluorescens* auct. (Eisenberg); two others have not yet been described. There is also in literature the description of a *Bac. erythrosporus* which likewise produces a green coloring substance, and which distinguishes itself by the formation of large, dirty-red spores. None of the seven kinds above mentioned agreeing with this description, there are consequently eight kinds.

Fricke vaccinated all seven upon sputa, and in all except *Bac. pyocyaneus* β green coloring of the sputa resulted. Consequently one or another of these bacilli might be found in other cases of green sputum.—*Correspondenz-Blatt für Schweizer Aerzte*, No. 9, 1889.

PATHOGENY OF THE ROUND ULCER OF THE STOMACH.—There are numerous theories on this subject. According to that most generally accepted there are two factors active in the development of the simple ulcer: a dyscrasic influence, a modification of crasia, such as is found in certain forms of anæmia and in chlorosis, and accidental local influences which produce hæmorrhagic or other ulcerations in the superficial layers of the inner surface of the stomach.

Ingesta may act in both forms, as modifiers of the blood crasia, or as local irritants. It would be interesting to know the relations existing between the different regimens and the occurrence of round ulcer. M. VON SOHLERN has made an investigation in this direction, having sent inquiries to a number of Russian physicians and pathologists to ascertain whether there is any truth in the claim that round ulcer is very rare in a certain part of Russia. The answers received all agree in confirming that statement. As an illustration some statistics furnished by Mr. Winogranoff, prosecutor at the Obuchow Hospital in St. Petersburg, are given here. In about 900 autopsies which are made every year in this hospital, only one or two cases of round ulcer are found. M. Pétersen, prosecutor at the Alexander Hospital, found only three cases of round ulcer in about 6,000 autopsies.

Information gathered by the author from physicians practicing in the Rhön and the Bavarian Alps, two districts in Bavaria, establishes also with surprising certainty the extreme rarity of round ulcer in these two regions. In Russia as well as the two Bavarian districts, the food of the inhabitants is almost exclusively of a vegetable character; meat is consumed only in exceptional cases. The climatic conditions in the two countries differ greatly, the food, too, is quite unlike.

There is only one thing common to the countries where round ulcer is rarely found, and that is the great proportion of potash in the food. To this circumstance the inhabitants of those countries would seem to be indebted for their immunity from round ulcer.—*Gazette Médicale de Paris*, No. 18, 1889.

INHALATION OF CHLOROFORM IN DISEASES OF THE HEART AND OF THE LUNGS.—PROF. ROSEN-BACH recommends warmly (*Jour. de méd. de Paris*) inhalations of chloroform in all those cases of lung or heart disease where the other narcotics, as, for instance, morphia, chloral, etc., act too slowly, or where their use is followed by disagreeable secondary symptoms. The method employed by him is as follows. From 5 to 15 gr. of chloroform are put on wadding placed in a funnel, and the patient slowly inhales the vapors from the funnel, which is held at a certain distance from the mouth and nose. As the chloroform is mixed with air there is no danger to be apprehended. The patient at first experiences a disagreeable sensation in the pharynx, but this soon passes off, the patient makes several deep inhalations which produce a feeling of well-being, and sometimes even produce sleep. The author never observed any harmful secondary symptoms ascribable to this treatment.

Chloroform inhalations are indicated in all attacks of dyspnoea of cardiac or pulmonary origin, but especially in emphysema, cardiac asthma, and in heart disease. Good results have also been obtained where they were employed for the attacks so common with phthisical patients. People who previously had been passing their nights absolutely sleepless, slept quite well after resort to the inhalations. Satisfactory results are also obtained in hiccough and in acute cardialgic attacks; in these latter cases, however, morphia is preferable. It deserves to be mentioned that the author succeeded sometimes in breaking up attacks of pulmonary oedema. He also thinks it useful to bathe the tuberculous ulcers of the larynx with a watery solution of chloroform, the improvement ensuing being due, in his opinion, partly to the analgesic and greatly to the antiparasitic action of the chloroform.—*Revue Médicale de l'Est*, No. 9, 1889.

AORTIC INSUFFICIENCY.—TIMOFEJEV expresses his opinion on this subject (*Berl. Klin. Wochenschrift*, June 11, 1888) as follows: 1. The diastolic murmur of aortic insufficiency can completely disappear and be replaced by the second normal tone. 2. The intensity of the diastolic murmur depends entirely (a) upon the degree of insufficiency, (b) upon the blood pressure in the aorta. 3. The blood pressure diminishes considerably in the course of valvular affections of the heart. 4. The second tone in the carotid of

dogs in which an aortic insufficiency has been produced, often disappears after a longer or shorter period. 5. The second murmur, which is heard sometimes on a level with the carotid in patients afflicted with aortic insufficiency, is a symptom of purely local origin, and not the continuation of a murmur from the base of the heart. 6. The first murmur which is heard sometimes in aortic insufficiency on a level with the carotid may have a purely local origin.

Rosenbach, however, arrived at contrary conclusions (*Berl. Klin. Woch.*, Sept. 17, 1888). He says: 1. The conditions causing the murmur after artificial destruction of the aortic valve differ essentially in the dog and the rabbit. In the former the murmur is irregular, and may be lacking or disappear in the course of observation, whilst in the latter it is constant and intense. 2. This difference is due to the circumstance that there never occurs precipitation of fibrin upon the injured organs in rabbits, whilst in dogs fibrin-deposits are numerous enough to make up temporarily for the loss of valvular substance. 3. Intra-arterial pressure has no noticeable influence on the intensity of the diastolic murmur, which is chiefly produced by the aspiration of the ventricle dilated by the diastole. 4. The production of the systolic murmur in aortic insufficiency must be ascribed to the backward flow caused, at the beginning of the aorta, by the aspiration of the left ventricle, which current must be overcome by the ventricular contents liberated in the moment of systole.—*Revue des Sciences Médicales*, No. 66, 1889.

ON DORSAL TABES AND EXOPHTHALMIC GOITRE—BARIÉ reports the history of a patient who was affected with various troubles: on the one hand the symptoms of tabes, lightning pains, Romberg's symptom, cessation of the patellar reflex, plantar anæsthesia, incoördination of movements, vertigo, gastric crises; on the other hand the symptoms of Basedow's disease; protrusion of the eye, tachycardia, hypertrophy of the heart, swelling of the thyroid, trembling, polyuria, etc. From this complex of symptoms he concluded that in the course of tabes the classical symptoms of exophthalmic goitre may appear, that these phenomena are the expression not of a disease developing parallel but of a pathological complexus lying in the centers of the medulla; he compares exophthalmic goitre in tabes to the bulbar troubles described by Pierret and Joffroy; he admits that goitre may be a symptom not of the highest stage but of the beginning of tabes which is doubtless related to a simple congestive hyperæmia, and will yield to the use of ergot and faradisation. (*Soc. Méd. des Hôp.*, Dec. 14, 1888). Joffroy reports in brief the cases of seven women afflicted with tabes, all of whom showed tachycardia, whilst six had ocular protrusion, and two

thyroid tumor. He does not share the opinion of Bériard, but thinks that the diseases of Basedow and Duchenne may be seen combined in the same individual; he admits, however, that ataxy may sometimes give way to tachycardia, and perhaps to a slight protrusion of the eye.—*Revue des Sciences Médicales*, No. 66, 1889.

MUSCULAR ATROPHY IN ATAXIA.—DÉJÉRINE found in 106 ataxic patients in his practice in Bicêtre, 11 presenting progressive muscular atrophy. He reports 5 clinical cases with autopsy and histological investigation. He concludes that in most cases muscular atrophy in patients with tabes results from neuritis of the peripheral motor-nerves: there exist consequently, besides the cutaneous sensitive neuritis already described by him in 1882, motor-neuritis having much in common with the former; both of them are the more pronounced the farther away from the centres the trunks of the nerves are examined; both of them are also of a peripheral character, for, in the cutaneous neuritis, the spinal ganglia are not affected the same as the interior horns, which are intact in the motor neuritis. The latter should therefore be considered henceforth as belonging to posterior sclerosis, the symptomatology of which they may change in certain cases. (*C. R. Soc. Biol.*, February 25, 1888). Apropos of the investigations of Déjerine regarding the peripheral nature of muscular atrophy in tabes, Joffroy cites several cases of Charcot, Pierret, Londoléo, and of his own practice, in which this atrophy was accompanied either by a lesion in one spot or by a lesion spread out over the motor nerve cells of the anterior horns. Déjerine is of the opinion that in these cases there existed coincidentally an acute tephromyelitis, sub-acute or chronic, with ataxy, but not a genuine muscular atrophy in tabes, which can only result from a neuritis of the peripheral motor-nerves.—*Revue des Sciences Médicales*, No. 66, 1889.

NORMAL AND PATHOLOGICAL CONDITIONS OF GANGLIONS IN THE HUMAN HEART.—ADOLPH OTT in the "*Prager Zeitschrift für Heilkunde*," Bd. ix., p. 271, says that ganglion cells are most frequently found in the septum atriorum, that is in its front or rear section, where it is thickest, its thinner middle portion scarcely containing any at all. But also in the circumference of the ventricles, especially in the rear portion, and preferably in that portion of the right ventricle located between the aortic and the pulmonary arteries, the ventricles do not contain any ganglia. The ganglion cells lie principally in the subpericardial connective tissue, but occur also scattered through the muscles. An examination of thirty hearts for pathological changes of the ganglion cells showed that they occur in two types: 1. As a progressive change-growth of connective tissue

between the cells and the nuclei of the Sheath of Schwann with formation of a tissue at first granular subsequently coarsely fibrous; besides in the advanced stages of this process fatty degeneration and compression of the ganglion cells; and secondly, as an acute parenchymatous degeneration of these cells. The former change is found in those cases which lead to stoppage and changes in size in the heart, the latter in complete qualitative alteration of the blood (uræmia, sepsis, etc.) Definite relations between changes of the ganglia and degeneration of the heart muscles cannot be proven. A causal connection between the changes in the heart, microscopically perceivable, and those of the ganglia exist only inasmuch as the stoppage of the blood causing hyperplasia of all tissues in the heart seems to favor also the growth of connective-tissue substances in the ganglia and its consequences. For clinical purposes the result of the investigation do not furnish any material which would allow of drawing a conclusion from the heart action as observed during life upon the pathological conditions of the ganglia of the heart, or which permit an influence upon the action of the heart, *i. e.*, its frequency or rhythm on the part of the changed ganglia to be recognized.—*Centralblatt für Klinische Medizin*, No. 15, 1889.

POISONING BY PTOMAINES.—M. MERVILLE reports a case where a family was poisoned by eating bouillon which was only one day old, but had been kept in a bedroom and had not been boiled over. The symptoms of the patients were very similar to those of cholera: incessant vomiting, abundant rice-like stools, cramps in the limbs, cyanosis, etc. The condition of the patients was very serious, but all recovered. This was evidently a case of poisoning by ptomaines which had formed in bouillon made of sound meat, large quantities of the soup having been eaten on the first day without causing any trouble whatever.—*Gazette Médicale*, No. 32, 1889.

ON TUBERCULOSIS OF THE LUNGS IN SUGAR-DIABETES.—A. BAGOU shows that phthisis in diabetic patients is always of a tubercular character, whatever its clinical form may be. Whether acute or chronic, or pneumonic or ulcerative; it always has the bacillus for an anatomical substratum which invades the organism all the more easily as it finds it debilitated with the impregnation with sugar. The immediate cause for tuberculosis in diabetes is the diminution of resistance of the organism. Clinically it is specially characteristic of this kind of phthisis to appear insidiously to cause but little hæmoptysis, little febrile reaction, hardly any perspiration. But from a prognostic standpoint it is of the most malignant type as it never improves.—*Revue des Sciences Médicales*, No. 66, 1889.

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LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JULY 6, 1889.

FORTIETH ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The first General Session of the Association assembled in the Music Hall at the hour named upon the programme. The meeting was called to order by the Chairman of the Committee of Arrangements, Dr. H. R. Storer, of Newport, who presented the President of the Association, Dr. W. W. Dawson. After prayer by the venerable Dr. Thayer, the senior clergyman of Newport, letters of regret were read from the following: Vice-President L. P. Morton; Hon. J. W. Noble, Secretary of the Interior; Hon. B. F. Tracy, Secretary of War; Hon. John Wanamaker, Postmaster-General; Hon. W. Windom, Secretary of the Treasury; Drs. Stillé, E. H. Gregory, Ex-Presidents of the Association; Dr. H. I. Bowditch, of Boston; Dr. W. B. Geikie, Dean of Trinity Medical College, Toronto; Dr. Montizambert, Medical Superintendent at Grosse Isle, Quebec; Sir James Grant, M.D., Ottawa, Can.; Sir Charles Tupper, M.D., Minister of Marine and Fisheries, Can.; Dr. P. H. Bryce, Provincial Board of Health, Ontario; Professor James C. Cameron, Montreal; and others.

Various letters of invitation were then read, one of the most important being that from the Faculty of Harvard University inviting the members of the Association to visit the College on their return home.

The Hon. H. W. Ladd, Governor of Rhode Island, addressed the Association in terms of welcome. He said that Rhode Island was noted for

its hospitality, and that the Association would find that its reputation would be maintained in that instance.

The Hon. Jas. H. Eldridge, M.D., of East Greenwich, welcomed the Association in the name of the profession of the State of Rhode Island (See p. 14).

The Presidential Address, a full report of which may be found in the fore part of this issue of THE JOURNAL, was read by Dr. J. A. Larabee, of Louisville. Dr. Dawson, the President, though present, found himself unequal to the task of delivering it on account of ill-health.

The proceedings of the second day were opened with prayer by the Rt. Rev. T. M. Clark, Bishop of Rhode Island. After the reading of announcements and the report of elections to the Nominating Committee, an Address on Medicine was delivered by Dr. Wm. Pepper, Provost of the University of Pennsylvania.

Dr. Pepper's address consisted of an interesting account of the life and labors of Dr. Benj. Rush, together with an eulogy of his character. The address was a most eloquent tribute to the memory of the first of our great American physicians. Dr. Pepper reviewed his life in considerable detail, but dwelt more upon his personal characteristics and the part he played in the contemporaneous history of his times, pointing out the manifold character of his work as a statesman, a literateur, a reformer and, most of all, a physician. As a medical officer of the Army, as the projector of the Philadelphia Dispensary, as a political, social, and medical reformer, his work was of the highest character. His essay on "The Physical Influence on the Moral Faculty" occupies a classical position in the literature of medicine. His efforts in opposition to capital punishment, slavery, intemperance, and the use of tobacco were of the most earnest and effective nature. He drew much of his inspiration from his friend, Franklin, as well as from his great teacher, Sydenham. He was not only a master of literary style but a most eloquent and effective speaker. He was an active and progressive educator. Through all his writings there runs a vein of piety free from sectarianism. After 1789 the greater part of his work was medical, while the most interesting part of his life was that subsequent to his election to the University of Pennsylvania. From this date,

1789, to the date of his death, 1813, the history of his life is the history of American medicine—the “Era of Rush.” As a medical teacher he was unrivaled for simplicity. His history of the epidemic of 1793 is one of the very best ever published. Dr. Pepper fears that in these days refinement in diagnosis and the study of disease often leads to the loss of valuable time, and that Sydenham’s belief that the prompt treatment of disease in its incipiency is one of the most important elements in our success as physicians, as it was in the case of his pupil Rush. Our own resources are much greater now than were theirs in the last century. We are often in danger from too great refinement. They had few and trusted remedies. We have many remedies for every symptom and do not thoroughly learn the use of any of them.

Dr. Gihon, U. S. N., Chairman of the Rush Monument Committee, then presented his annual report. He regretted that the Committee could not report progress, and feared that the members would not live to see the fruition of hopes indulged five years ago when the Committee was appointed. The treasurer had only received \$1,000. After a most energetic appeal to the whole profession for aid in this important movement, he announced that the dollar limit had been abandoned and that sums of any amount would be received. In the midst of much enthusiasm the sum of \$264.50 was soon added to the fund.

The debate on adoption of amendments to Constitution then followed.

The amendment to strike out the last clause of Sec. VII, relating to individually affixing names to the Constitution and regulations of this Association, was adopted.

The amendment proposed by Dr. Moyer, referring to changes in the Constitution of the Sections, was indefinitely postponed.

After a lively debate the resolution affecting the personal duties of the General Committee was lost.

The proceedings of the third day were opened with prayer by the Rev. James Coyle, (R. C.) of Newport.

The Address on General Surgery was then given by Dr. Phineas S. Conner, of Cincinnati, and will be found reported in full in this issue of THE JOURNAL.

Dr. R. J. Dunglison, of Philadelphia, presented his annual report as Treasurer which showed the Association to be in satisfactory financial condition.

The Nominating Committee then made their report, after which it was decided to hold the next meeting at Nashville, Tenn., on the third Tuesday in May, 1890.

The following officers were elected: President, E. M. Moore, of New York; First Vice-President, J. W. Jackson, of Missouri; Second Vice-President, W. W. Kimball, of Minnesota; Third Vice-President, J. H. Warren, of Massachusetts; Fourth Vice-President, T. B. Evans, of Maryland; Treasurer, R. J. Dunglison, of Pennsylvania; Permanent Secretary, W. B. Atkinson, of Pennsylvania; Librarian, C. H. A. Kleinschmidt, D. C. To deliver Address on General Medicine: Dr. N. S. Davis, of Illinois; General Surgery, Hunter McGuire, of Virginia; State Medicine, Alfred L. Carroll, of New York.

The Hon. Geo. Bancroft, and Sir James Grant, of Ottawa, were then presented to the Association, the latter making a few remarks in which he dwelt upon the advances made during the past half century in the treatment of insanity, and referred to the advances made in the surgery of the thorax. The subjects of medical education and examination were touched upon, and he recommended that the best way to weed out irregular practitioners is to require “a rigid preliminary training.”

The fourth day’s proceedings were opened with prayer by the Rev. D. A. Jordan, (M.E.), after which Dr. W. H. Welch, of Baltimore, delivered the Address on State Medicine, a full report of which will be published in a future issue of THE JOURNAL.

Dr. J. M. Toner, Chairman of the Committee on Necrology, presented his annual report.

The full Official Report of the Proceedings of the Fortieth Annual Meeting of the Association will be published in THE JOURNAL as soon as received from the Permanent Secretary, Dr. W. K. Atkinson, of Philadelphia.

THE WEEKLY MEDICAL REVIEW, of St. Louis, will be enlarged to the size of the *New York Medical Journal*.

EDITORIAL NOTES.

HOME.

UNIVERSITY OF PENNSYLVANIA.—The Associate professorships of Obstetrics in the Medical Department of the University will be consolidated and Dr. Barton C. Hirst elected as Professor of Obstetrics. Dr. William Goodell will continue his duties as Professor of Gynecology.

THE MEDICAL SOCIETY OF THE STATE OF WEST VIRGINIA will hold its twenty-second annual meeting at White Sulphur Springs from July 17-19, 1889. Full particulars as to railroad arrangements, etc., may be learned on application to the Secretary, Dr. J. L. Fullerton, Charleston, W. Va.

THE CHICAGO POLICLINIC is now an assured success. The enterprising Faculty have commenced the erection of a handsome four-story structure on Chicago avenue, west of Wells street. The exterior will be constructed of brick and stone, and the interior finished in hardwood and heated by steam. It will cost \$25,000 and will be completed in about four weeks.

THE OHIO STATE MEDICAL SOCIETY.—At the forty-fourth annual session of this Society, recently held in Youngstown, O., the following gentlemen were elected officers: President, Dr. John McCurdy, of Youngstown; Vice-Presidents, Drs. J. W. Conklin, of Dayton; A. W. Ridenour, of Massillon; C. W. Tangerman, of Cincinnati; J. E. Woodbridge, of Youngstown; Secretary, Dr. G. A. Collamore, of Toledo; Assistant Secretary, Dr. E. C. Brush, of Zanesville; Treasurer and Librarian, Dr. T. W. Jones, of Columbus. The next meeting will be held at Columbus, the first Wednesday in June, 1890.

FOREIGN.

DR. QUAIN, F.R.S., has received the appointment of physician-extraordinary to Queen Victoria.

PROF. LÖWENTHAL has received a special mission from the French Government to proceed to Tonquin to study the effects of salol on cholera patients.

THE TENTH INTERNATIONAL MEDICAL CONGRESS.—Professors Virchow, von Bergmann, and Waldeyer have charge of the preliminary work for the next Congress, and are actively engaged

in maturing plans to make it a great success. There will be a conference of delegates from all the medical bodies in Germany at Heidelberg in September. It is likely the Congress will commence its proceedings on August 6, 1890.

IN FRANCE death by electricity has fascinated the French. The Parisians have petitioned the Municipal Council of Paris to substitute the electric current for the guillotine as a more merciful method of capital punishment. The meteorological observatory on the Eiffel Tower is now at work. The direction and force of the wind, the moisture and dryness of the atmosphere, the variations of temperature, cloud observations and weather forecasts will be minutely recorded, and the reports placarded in the Exhibition buildings proper.

IN ITALY Prof. Taurini recently successfully performed total extirpation of the clavicle for myxo-sarcoma. Several prominent members of the medical profession have recently died: Enrico Albanese, professor of clinical surgery in the University of Palermo, died of Addison's disease on April 8; Dr. Davis Maragliano, professor of psychiatrics in the University of Genoa; Dr. Luigi Barzanò, a pioneer of electro-therapeutics in Italy; Dr. E. Bonamici, lecturer on materia medica and toxicology at Florence; and Dr. A. De Marchi Gherini, the leading surgeon in Milan.

IN EGYPT the epidemic of typhus fever has almost entirely yielded to energetic measures. Small-pox is prevalent. Dr. Hassan Pacha Mahmoud claims to be the discoverer of an affection which he names *bouton d'Egypte*. He states that the *bouton* is peculiar to Egypt, is non-contagious, contains no trace of microbe, differs from an ordinary furuncle, is superficial, leaves no traces on the skin, may last from twelve to fourteen years, and owes its origin to the action of the air and sun. Rabies is present in Egypt. In Cairo and Helouan 13,326 dogs have been poisoned within fifteen months.

IN INDIA the Government is taking stringent precautions against the spread of leprosy, and it is proposed to empower the district magistrates to arrest any leper found wandering about without means of subsistence. These may be detained in a retreat for life. Every retreat is to provide for the complete separation of the sexes. Great dis-

tress prevails in some districts. In Ganjam, where the situation is worst, no drinking water remains in the tanks, and cholera is epidemic throughout the district.

SOCIETY PROCEEDINGS.

American Medical Editors' Association.

*Annual Meeting, held at Newport, R. I.,
June 23, 1889.*

W. C. WILE, M.D., PRESIDENT, IN THE
CHAIR.

The American Medical Editors' Association met at 8:30 P.M. The meeting was called to order by the President, Dr. Wm. C. Wile.

DR. WM. BRODIE, of Detroit, was invited to occupy the Chair during the reading of the *Presidential Address*.

(See page 10.)

In the discussion which ensued DR. BRODIE, of Detroit, said he thought there were too many journals and too few good journalists. There is too much work done with the scissors. Many good papers are lost by being published in short-lived journals. He believed that THE JOURNAL of the Association should be conducted on a thoroughly impersonal plan, in which the identity of the editor is wholly lost to view. THE JOURNAL had done much good work in killing off other journals of little value.

DR. DULLES, of Philadelphia, said he believed it the duty of medical editors to foster good journals and kill the bad ones. He emphasized the necessity of maintaining a high ethical and literary standard and of promoting brotherhood in the profession.

DR. LEARTUS CONNOR, of Detroit, believed that idealism in medical journalism does not pay. Some of the most wretched journals pay the best. He was reminded of the tobacco manufacturer who said that if one would be rich he should pander to the *vices* of the people.

DR. I. N. LOVE, of St. Louis, did not take the same pessimistic views that some of the other speakers had expressed. He believed that Darwin's law holds good in journalism as in animal life.

DR. N. S. DAVIS, of Chicago, in his most vigorous manner rebuked the patronizing of foreign schools to the neglect of our own, and asserted that one-fourth of the money expended by our students in foreign countries would serve to perfect our own valuable institutions.

DR. T. D. CROTHERS, of Hartford, read a paper on

THE INFLUENCE OF MEDICAL JOURNALISM ON THE MARCH OF SCIENCE.

He believed that the influence of the medical journal could scarcely be overestimated. Medical journals may be divided into three classes: the general, the special, and the encyclopædic, each of which has its own value. Quarterlies are doomed, while the others are constantly increasing their usefulness. At present the weekly journal is the type, but in the near future we may look for the medical daily.

DR. PANCOAST, of Philadelphia, said he deplored the failure to report the daily work of the clinics. The weekly journal should be a mirror of the medical and surgical work done in the clinics of each community. We look to the journal for the knowledge we need in our daily work. He does not share in the pessimistic views expressed by some of the journalists present but on the other hand had much reason to praise our own journals and criticise those of foreign lands.

DR. CONNOR dwelt on the necessity of putting well-digested materials before the readers, but warned his hearers against the danger of emasculating good articles by cutting them down.

DR. WAUGH, of Philadelphia, found little in what had been said during the discussion with which he could agree. What is ideal reading for one cannot be ideal for all. As for special journals, there are not specialists enough to support them, whereas culled special matter may well enliven the columns of a general journal.

DR. STORER, of Newport, found much satisfaction in the thought that the plan which he indorsed eighteen years ago, of founding a weekly journal as the organ of the American Medical Association had met with such great success.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Academy of Medicine; Dr. P. A. Morrow relates some Personal Observations of Leprosy—Discussion on the Danger of the spread of Leprosy.

At the last scientific meeting of the Academy of Medicine for the present season Dr. P. A. Morrow gave some interesting personal observations of leprosy, recently made in Mexico and the Sandwich Islands, with magic lantern illustrations of typical cases. He said that leprosy was too often looked upon as possessing only a historic interest, like the plague and other diseases of former times. It would not do, however, to so regard it. Unfortunately, it was a living reality, and a map representing the geographical distribution of the disease would show that it extended over fully

one-third the surface of the globe. This general distribution, he believed, had a very important bearing upon its etiology. It was impossible to give the exact number of lepers at present in the world, but in India alone there were certainly not less than 150,000.

The importation of leprosy from a country where the disease was endemic to one where it had been previously unknown, he said, could always be traced to the agency of personal contact. In our own country the cases of the disease could be traced to three or four distinct sources. In Louisiana it had been introduced by the Acadians when they settled there in 1758. In Iowa, Wisconsin, Minnesota and Illinois it had been introduced by Scandinavian immigrants; and in California and Oregon by the Chinese. He had recently become aware of the hitherto unknown existence of the disease in Great Salt Lake City, where it had been brought by natives of the Sandwich Islands.

Dr. Morrow's personal observations began in New Orleans, where Dr. Blanc reported the existence of forty-two cases last year; these being entirely independent of the lepers of the Teche River district of Louisiana. In Mexico leprosy had existed ever since the time of Cortez, who established a lazaretto which continued in use until about thirty years ago. Since that time lepers had been cared for in the general hospitals, and numbers of these people might be met with in the streets of Mexico at any time. At San Francisco he saw quite a number of cases; six of them being in the pest-house there. The Sandwich Islands, he thought, offered probably the best field in the world for the study of leprosy, on account of the comparatively recent origin and great prevalence of the disease there. Segregation had been secured by the establishment of an isolated leper settlement, and there were now more than 11,000 cases at it.

It was only within the last twenty-five years, he went on to say, that the true character of leprosy has been ascertained. We now know that it is a parasitic disease; and the bacillus lepra discovered by Hansen presents certain analogies to the tubercle bacillus. This is particularly true as regards its remarkable vital tenacity. Like all specific microbes, it has an elective affinity for certain fluids and tissues of the body. As regards the origin of leprosy, he said it could be stated positively that the disease never originated spontaneously. It does not attach to the soil, water or food, but is always communicated from an individual, and can always be traced to personal contact. Its period of incubation is a long one. This is variously stated at from three to five years, but in certain instances seems to be from ten to fifteen years. It is a very difficult matter to arrive at the exact period of incubation, because there is no initial lesion, and the prodromal symptoms are

very indefinite. The progress of the disease is slow, but it almost invariably terminates fatally.

There are several moot points in regard to the disease, and the first of these is as to its contagiousness. This has never been at all questioned until comparatively recent times; but about thirty years ago it began to be doubted. It is worthy of note, Dr. Morrow thought, that the leading dermatologists of New York have never accepted the heresy of the non-contagiousness of leprosy. The history of the disease in the Sandwich Islands afforded the most conclusive proof of its contagiousness. In no other way could its rapid spread throughout the race be accounted for; at the present day from 5 to 10 per cent. of the native population being lepers. In investigating the disease one can get a history of personal exposure in almost every instance. At the leper settlement many of the patients are incapacitated from taking care of themselves, and are obliged to have relatives or friends to look after them, who are presumably free from the disease when they go there. It has been observed that a very large number of these attendants after a time contract the disease; and it is also a well-known fact that a considerable number of foreigners living in the Sandwich Islands have become victims to leprosy.

As to the modes of infection, our knowledge is not positive; but in a large proportion of cases this is probably by sexual intercourse. It seems probable that the disease may be contracted through abrasions of the mucous membrane or skin, and also by means of animal parasites or the bites of mosquitoes and other insects. Vaccination has undoubtedly been one of the causes of the spread of leprosy, humanized virus being used, and no distinction being made between healthy and unhealthy subjects in procuring the virus. Inoculation of leprosy has been successfully carried out in one instance, the subject being a condemned criminal. Dr. Morrow said he had seen one case in which the patient claimed to have contracted the disease from the bite of a leper, and another in which the patient stated that it came from the prick of a pin with which a leprous boy had amused himself by sticking it into his body.

Another moot point is that of heredity. Formerly this was regarded as positively established, and in all ages it has been looked upon as the principal cause of the disease. In his personal observations, however, he said he found no proof whatever to support the view of heredity. A predisposition to leprosy might be transmitted, as in the case of tuberculosis; but he did not believe that the actual germ was ever so transmitted. There is not a single case of congenital leprosy on record. In instances of suspected heredity the child never shows evidences of the disease under the age of 3 years, and usually not until puberty. In general, the disease develops only in those

from 30 to 50 years old. Leprosy, then, is either analogous to late syphilis or else it is not transmitted at all to offspring. Observation shows that the children of lepers do not become infected unless they are kept in close contact with their parents. Very few living children are born in the leper settlement. For seven years there were only two; and later, of twenty-six infants that lived, nine presented evidences of the disease between the ages of 3 and 14, while the remainder escaped infection entirely. It is altogether probable, therefore, that in all cases of suspected heredity the disease is really due to post-natal contagion.

Among the photographic slides thrown upon the screen was one of the late heroic Father Damien, taken only six weeks before his death, and also one of the convict upon whom inoculation was successfully practiced, the only case on record. This man, who had been condemned to death, was given his choice between execution and imprisonment for life with inoculation with leprosy; and the inoculation was made by Dr. Arning in September, 1884. Bacilli were found in numbers about the inoculated spot until March, 1885, after which they gradually diminished in number. For several years the result was regarded as negative, but more recently evidences of infection have developed, and at the present day there can be no question of his having well-marked leprosy.

A discussion then followed in regard to the danger of the spread of leprosy in this country. It was opened by Dr. Morrow, who expressed the opinion that such a danger actually exists, and said that the disease in its present state here might be compared to a conflagration, which could easily be extinguished at first, but which, left to itself until it had gained a certain headway, could not be subdued until all the material it had to feed upon had become exhausted. In the Sandwich Islands in 1848 there were but few cases of leprosy, and for twenty years the Government paid no attention to the disease. By that time there were about 250 cases, and the authorities, becoming alarmed, took stringent measures for its suppression. A system of segregation was adopted, but, unfortunately, the danger was appreciated too late. He did not believe that such a fate as that of the Sandwich Islands was in store for the United States; but, at the same time, he thought there was a sufficiency of leprosy seed here to stock this or any other country. The only question was, whether the soil was favorable for the development of the disease. Any one who believed in the contagiousness of leprosy, must assume either that a great danger menaces us, or else that the conditions of our civilization are not favorable for the spread of leprosy.

He went on to say that, in his opinion, the danger was not such as seriously menaced the public health, as the disease would spread very slowly, if at all. At the same time it should be

borne in mind that leprosy is a disease in which the resources of medical science are futile, and measures should therefore be taken to stamp it out. It is probable that there are more cases in this country now than ever before. The report of forty-two cases in New Orleans last year was a surprise to every one, and the propriety of legislative enactment for the suppression of the disease is unquestionable.

Dr. C. W. Allen said that his convictions on this subject were very decided. Two years ago, in a paper read before the Medical Society of the County of New York, he had contended that lepers should not be admitted to this country, and that those already here should be segregated. Two years ago he had placed the number of cases in the United States. This number, he had reason to believe, was too small at that time, and he thought there could be no doubt that there had been a considerable increase since then. When we considered the number of cases already existing, and the increased likelihood of the spread of the disease from the increasing facilities of modern travel, etc., this question became one that we could no longer shut our eyes to. Of the forty-two cases reported in New Orleans, where no leprosy was supposed to exist, twenty-nine were natives of Louisiana, and twenty-two of the city of New Orleans. One of these had been a nurse in a hospital where a leper was under treatment. The evidences of the contagiousness of the disease were positive, and as long as a single leper existed anywhere he would constitute a source of danger to those about him.

Dr. L. D. Bulkley said he regarded this subject as one of the most important ever brought before the Academy. No one could fail to see, he thought, that whenever leprosy has been allowed free scope it has spread; while, on the other hand, whenever proper measures have been taken in time against its spread, it has been exterminated. There seemed to him a propriety in having the matter agitated, and he thought the least the health authorities could do would be to ascertain the number and condition of the lepers now in this country. For the last twenty years he had seen two or three cases every year in New York. One case he had met with in a patient who had never traveled many miles from Poughkeepsie, where he lived, and another in one who had never been far from New York. Precisely how they contracted the disease he did not know, but there could be no question that they had derived it from antecedent cases. Leprosy always came from leprosy. He differed from Dr. Morrow, however, in the opinion that the bacillus lepræ does not exist in the soil, water, etc., and believed that it may be left there like other germs. In concluding he said he thought it would be well to appoint a committee to report on the question under discussion at some future time.

Dr. George H. Fox said that the exciting of alarm seemed to him objectionable on account of the false assumption that there has been a spread of leprosy in this country. The cases met with here were nearly all imported, and in spite of the fact that there was no law prohibiting the entrance of lepers, and that no segregation was practiced, he believed that the number at present was smaller than at former periods. Some of the cases formerly here had died, and others had left the country. He also knew of one case at least in which the patient considered himself cured; no signs of the disease having appeared for six years. He admitted that there was a slight danger from the lepers still remaining; but so there was, he said, from hydrophobia. As a rule, the whites of the Sandwich Islands were free from leprosy; and he had yet to learn of an instance of the spread of the disease in a white civilized country. Its prevalence among the Hawaiians, he believed, was in great part attributable to their uncleanly habits and mode of living. The danger was of course greater, the greater the number of lepers; but it was very rare for nurses, sisters of charity and others in constant attendance upon leprosy patients to contract the disease. All lepers, he thought, should be prevented from landing here, as the paupers were, not so much from the likelihood of their spreading the disease as because, like paupers, they would be a burden on the community. The popular dread of this disease was unfounded and absurd, and even physicians shuddered at the name of leprosy while they looked with complacency upon syphilis and tuberculosis.

Dr. H. G. Piffard said that ten years ago he had read a paper before the Academy in which he discussed the question now raised, and since then his views had not altered. The points for which he contended at that time were, first, that leprosy is contagious; second, that lepers should be segregated; third, that it is the function of the National Government to attend to this. At this meeting a committee was appointed from the Academy to investigate the subject of leprosy in this country, and the committee performed the work required of it so far as it was possible to do so. It did not succeed, however, in tracing out more than forty or fifty cases in the United States; many cases, no doubt, escaping observation.

It was his opinion that, at the present time, there were at least five times as many lepers in the country as there were ten years ago. That segregation was necessary was shown by the fact that wherever this has not been carried out the disease has increased, not in arithmetical, but in geometrical progression. To the question, whose charge is it to attend to this segregation? he would answer, the National Government's. The Government should, in the first place, prevent the entrance of all lepers into the country; and secondly, induce, as far as possible, all lepers now

here to go to properly appointed lazarettos. It should be the duty of each State to place its own lepers in these lazarettos. Whether the present discussion could have any practical effect he thought was very doubtful. Not until the necessity of taking active measures to prevent the spread of leprosy forced itself upon public attention would anything be done; but that time, he believed, would surely come sooner or later.

Dr. F. R. Sturgis said he believed that Dr. Morrow was right in stating that there was no immediate danger to the public health from this source, but that it was undoubtedly the duty of the medical profession to call attention to the matter. Up to the present time the evidence of direct inoculation with leprosy had been lacking; but the case of the criminal referred to really seemed to show the possibility of inoculation, and further confirm the contagiousness of the disease. It was probable that leprosy followed a course similar to that of syphilis; being more contagious than in its later stages. As to the bacillus mentioned, he did not think it has as yet been proved to be the cause of the disease, any more than was the case in regard to the so-called bacillus of syphilis. Dr. Fox depended on negative evidence for the position which he assumed; but one positive case was of greater value than all such negative evidence. In our crowded and filthy lodging-houses he believed there existed all the conditions favorable to the development of leprosy if the contagium was once introduced. As to the comparative risk from leprosy and syphilis, he said he would rather run his chances with the latter, as there was, so far as he knew, no cure for leprosy. Syphilis might be ten times more contagious than leprosy, but leprosy was ten times as dangerous.

In closing the discussion Dr. Morrow said there seemed to him but little doubt that the leprosy in the case of the criminal mentioned was positively caused by the inoculation. This was made in 1884, and the four years that elapsed before leprosy made its appearance corresponded entirely with the ordinary incubation period of the disease. It was an important fact, he thought, that the spread of leprosy in the Sandwich Islands had occurred under conditions of high civilization; the state of the population being greatly superior to what it was fifty years before. Dr. Fox labored under a misapprehension in regard to the people there, who were in reality infinitely better off than the majority of the poorer classes in this country. They were accustomed to bathe four or five times a day, and were otherwise cleanly in their habits. Yet, notwithstanding their improved condition, the scourge of leprosy had attained the most fearful proportions among them.

In regard to the contagiousness of the disease, there was one point which offered a possible explanation of the difference of opinion which had

existed concerning it. He thought it extremely doubtful whether the anæsthetic type of leprosy was capable of transmitting the disease. It was this form, rather than the tubercular, which predominated in India and Mexico to-day, and in this the bacilli were not found in the external lesions. To his mind the evidences of contagiousness abounded and superabounded. He did not wish to be considered an alarmist, but in regard to this disease he believed that a wholesome dread was better than a false security. By the adoption of active measures he thought it could be stamped out absolutely. At the conclusion of his remarks Dr. Morrow exhibited under the microscope specimens of the bacillus lepræ which had retained their vitality for a very long period. P. B. P.

NECROLOGY.

Dr. F. H. Rehwinkle.

We regret to announce the death of Dr. F. H. Rehwinkle, of Chillicothe, O., who succumbed on the 7th ult. from the effects of a stroke of paralysis. The stroke came to the doctor as it always comes, suddenly, and without a moment's warning—if one overlook the haggard and broken-down condition which had been apparent in Dr. Rehwinkle for the past year. He had gone across the street after supper, and consenting to take a drive with Dr. Searce, had gotten into the buggy and sat there talking and laughing with the doctor's daughter, Miss Lizzie, awaiting the doctor's readiness. When Dr. Searce got into the buggy and took the lines, and Dr. Rehwinkle bade Miss Lizzie good evening, there was no indication whatever of the terrible affliction that was about to befall him; but the horse had not taken twenty steps when, in the reply to a question that Dr. Searce put to his companion, he observed that something was wrong. Observing him more closely when they reached a point near the postoffice, he remarked, "Doctor, you are sick!" and immediately turning around drove back to Dr. Rehwinkel's house, less than a hundred yards distant, but with the wreck of the alert, intelligent and sentient human being who had left there but a moment before. With assistance he was carried into the house, and to his room, where an examination of the patient showed that there was complete paralysis of the left side. He afterwards sank into a half comatose condition, though able to recognize his relatives and friends, and in that condition had remained up to the time of his death.

The most intimate friends of Dr. Rehwinkle have known for some time past that he feared what has now happened. It was only a short time ago that he remarked in casual conversation with

a party of friends, "I believe that I will die of paralysis; and I fear at times that the stroke has been hanging over me for months, and that it may fall at any moment." All his friends had noticed how terribly he had aged within the past year; how worn and haggard he had looked; and it has been a source of frequent, sympathetic and regretful comment among them. He had complained for some time of an unpleasant sensation in the neighborhood of the heart, and this, and the fancied symptoms of paralysis have been such as to prevent him from venturing from home any distance.

Dr. Rehwinkle has been regarded as a dental surgeon of extraordinary science and skill; few or no surgeons in the state ranking higher than he in his chosen profession. To him was accorded the compliment of appointment as one of the three American Secretaries to the International Congress of Dental Surgeons, which assembled at Washington D. C., in 1887; and upon him fell a large proportion of the work of preparation for that meeting.

Dr. Rehwinkle was a member of the American Medical Association, and Chairman of the Section on Dental and Oral Surgery.

MISCELLANY.

THE 75,000 EDITION.—The *Chicago Medical Journal and Examiner* says:

The business manager of THE JOURNAL of the Association has issued an extra edition of seventy-five thousand copies of THE JOURNAL, which contains a carefully prepared report of the requirements of the various medical colleges of the United States and Canada, compiled by Dr. W. G. Eggleston, formerly assistant editor of THE JOURNAL.

The additional work involved in issuing this large edition has been considerable, and it is to be hoped that it will be the means of advancing the interests of the Association and of its official organ, and thus reward the business manager for his faithful efforts to serve both.

MEDICAL SOCIETY NOTES.—The semi-annual meeting of the Medical Society of Fulton County, N.Y., was held at Gloversville on the 18th ult. "Modern Treatment of Wounds" was the subject of a paper read by Dr. F. Drury, of Broadalbin. Dr. W. C. Wood read a paper on "Lazy Therapeutics." Miss M. Helen Cullings was admitted to membership.

At the annual meeting of the Rochester Pathological Society, held recently, the following were elected officers for the ensuing year: President, Dr. Benjamin Wilson; Vice-President, Dr. E. T. Dow; Secretary, Dr. Ogden Backus. Dr. E. W. Mulligan, the retiring President, read a paper on "Microscopy in Medicine."

HEALTH IN MICHIGAN, MAY, 1889.—For the month of May, 1889, compared with the preceding month, the reports indicate that diarrhoea and inflammation of kidney increased, and that influenza, remittent fever, pneumonia, erysipelas and pleuritis decreased in prevalence.

Compared with the preceding month, the temperature in the month of May, 1889, was higher, the absolute humidity was more, the relative humidity and the day and the night ozone were less.

Compared with the average for the month of May in the three years, 1886-88, tonsillitis increased. and measles, consumption of lungs, erysipelas and remittent fever were less prevalent in May, 1889.

For the month of May, 1889, compared with the average of corresponding months in the three years 1886-'88, the temperature was slightly lower, the absolute and the relative humidity were slightly less, and the day and the night ozone were about the same.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of May, 1889, at 22 places, scarlet fever at 48 places, typhoid fever at 10 places, measles at 23 places, and small-pox at 2 places.

Reports from all sources show diphtheria reported at 1 place less, scarlet fever at 5 places more, typhoid fever at 5 places more, measles at 9 places more, and small-pox at 1 place more in the month of May, 1889, than in the preceding month.

THIRTY-ONE YEARS A UNIVERSITY PROFESSOR.—The resignation of Dr. T. G. Richardson from the faculty of the Tulane University, brought forth the following expression from his fellow-members of the faculty:

MEDICAL DEPARTMENT, }
Tulane University of Louisiana, }
New Orleans, May 20, 1889. }

WHEREAS, Prof. T. G. Richardson, who has served the medical department thirty-one years—fourteen years as Professor of Anatomy and seventeen as Professor of Surgery, including twenty years as Dean—has urged the acceptance of his own resignation because of ill-health; therefore be it

Resolved, That Prof. Richardson's resignation is accepted with the utmost regret, this faculty being thereby deprived of its most valued member and its wisest counselor.

Resolved, That the members of this faculty can never forget that his inflexible devotion to truth, honor and duty furnished for their guidance the highest and noblest standard of true manhood; that his ability and experience as a teacher placed him in the foremost rank of medical instructors; that his wisdom as Dean successfully guided the destiny of the medical department through many years of its severest trial; and that to him, more than to any other, is due its present prosperity.

Resolved, That while deeply deploring the necessity that withdraws from active service our senior professor, yet our hearts are revived by the hope that time and rest will restore him to health and give to him many happy and useful years wherewith to bless his family and his friends and to benefit all of his fellow-citizens.

Resolved, That Dr. T. G. Richardson is hereby chosen Emeritus Professor of Surgery.

Signed by Stanford E. Chaillé, M.D., Dean; Ernest S. Lewis, M.D., Jno. B. Elliott, M.D., committee in behalf of a unanimous faculty.

SUMMER DIARRHŒA.—*The Medical Record* says: The period has come when the well-to-do minority of physicians leaves the city, while the hard-working majority stays in town and writes articles on summer diarrhœa and related topics. Fortunately, something new is furnished us every year on these matters. We have passed from the stage of heat and sour milk as causative factors of summer diarrhœa; we are even leaving the microbe a little behind, and are dallying now with the ptomaines. The latest theory is one set forth by Dr. Ballard, in a report to the Local Government Board of England on the causation of the annual mortality from diarrhœa (*Lancet*). Dr. Ballard states his views as follows: "That the essential cause of diarrhœa resides ordinarily in the superficial layers of the earth, where it is intimately associated with the life processes of some microorganism not yet detected, captured, or isolated. That the vital manifesta-

tions of such organism are dependent, among other things, perhaps principally, upon conditions of season, and on the presence of dead organic matter, which is its pabulum. That, on occasion, such microorganism is capable of getting abroad from its primary habitat, the earth, and having become air-borne, obtains opportunity for fastening on non-living organic material, both as nidus and as pabulum, in undergoing various phases of its life history. That in food, inside of, as well as outside of the human body, such microorganism finds, especially at certain seasons, nidus and pabulum convenient for its development, multiplication, or evolution. That from food, as also from the contained organic matter of particular soils, such microorganism can manufacture, by the chemical changes wrought therein through certain of its life processes, a substance which is a virulent chemical poison; and that this chemical substance is in the human body the material cause of epidemic diarrhœa."

A SOUVENIR.—The Lambert Pharmacal Co., of St. Louis, distributed at the Newport meeting a very handsome little souvenir containing a list of the officers of the Association, programme of the general sessions, list of Presidents of the Association from 1846 to 1889, and a number of views of Newport.

TRAINING SCHOOLS FOR NURSES.—The seventh annual graduating exercises of the Illinois Training School was held at the County Hospital, Chicago, on the 25th ult. Addresses were made by Dr. J. S. Knox, Charles L. Hutchinson, President Brand, of the County Hospital medical staff, Frankliu H. Head, Dr. Julia Holmes Smith, Dr. Sarah Hackett Stevenson, and Mrs. C. B. Lawrence. Diplomas were presented by Dr. Johnson to the following graduates: Abbie Brotherton, Mary L. Grott, Orissa Stanton, Lillian E. Beckley, Emma Baumbach, Ida F. Towers, Nora Morgan, Lizzie Glennie, Sara Krueger, Cora Overholt, Mary H. Porter, Lizzie M. Graham, May Bixby, Salome Beardsley, Hattie Sigsbee, Ellen Strandt, Carrie Keeler, Mary M. Roburn, Mattie Hirth, Dora Stager, Mary D. Sexton, Flora A. Reid, Anna Nicholes, Edna Goble, Laura Happerly, Idora Rose, Lillian Gilmore, Carrie Leoner, Nora Vasey, Emily Vasey, Emily J. Keisz, Ella Harth, Joanna Kellogg, Victoria King.

The Commencement Exercises of the Memphis, Tenn., Training School for Nurses was held in that city on the 23d ult. There were four graduates: Misses Effie Lugham, Hattie Dunlop, Lena C. Angevin, and Tillie J. Aiken.

DIPHTHERIA AND THE SALOON BUSINESS.—The Paterson, N. J., Board of Health has distinguished itself by a recent decision. It is to the effect that where the placing of a green card on a house to indicate the presence of diphtheria on the premises would interfere with the business of a saloon-keeper, the card may be placed on the back door, where the general public may not see it!

PAMPHLETS RECEIVED.

Transactions of the Medical Society of the State of New York, 1889.

Uterine Massage. By W. B. Sprague, M.D., Detroit, Mich. (Reprint.)

Observations in Clinical Therapeutics. By J. A. Robinson, M.D., Chicago. (Reprint.)

Annual Report of the Essex County Asylum for the Insane, Newark, N. J. 1889.

Eighth Annual Announcement of the Woman's Medical College of Baltimore. 1889.

The Climate of Southwestern Texas and its Advantages as a Health Resort. By M. K. Taylor, Major and Surgeon, U. S. Army, retired. (Reprint.)

Puerperal Hysterectomy or Porro's Operation. By Edwin Ricketts, M.D., Cincinnati. (Reprint.)

The Radical Cure of Hernia. By Thos. W. Kay, Scranton, Pa. (Reprint.)

Ninth Annual Report of the State Board of Health of Illinois.

Second Biennial Report of the North Carolina Board of Health.

Sixth Report of the State Committee on Lunacy of the Commonwealth of Pennsylvania.

Proceedings of the Florida Medical Association. 1889.

Annual Address of the President of the Philadelphia Obstetrical Society. By Prof. Theophilus Parvin, M.D. (Reprint.)

Electric Cataphoresis as a Therapeutic Measure. By Frederick Peterson, M.D., New York. (Reprint.)

Yellow Fever. By Frank H. Caldwell, M.D., Sanford, Fla.

So-called Varicocele in the Female. By Henry C. Coe, M.D., M.R.C.S., New York. (Reprint.)

Fees in Hospitals. By Henry J. Bigelow.

Twenty-eighth Annual Report of the Cincinnati Hospital. 1889.

The Question of Relationship between Lichen Planus (Wilson) and Lichen Ruber (Hebra). By A. R. Robinson, M.B., L.R.C.P. (Reprint.)

The Rational Method of Preventing Yellow Fever on the South Atlantic Coast. By J. C. LeHardy, M.D., Savannah, Ga. (Reprint.)

A Clinical Study on Alopecia Areata and its Treatment. By L. Duncan Bulkley, A.M., M.D., New York. (Reprint.)

Scarlatinous Otitis. By Charles H. May, M.D., New York. (Reprint.)

Hygiene versus Surgery in Gynecology. By Julia W. Carpenter, M.D., Cincinnati, O. (Reprint.)

Warner's Therapeutic Reference Book. By Wm. R. Warner, Philadelphia.

Proceedings of the Quarantine Conference held in Montgomery, Ala., March 5-7, 1889.

LETTERS RECEIVED.

Dr. John Marsh, Madisonville, O.; Dr. R. J. Dunglison, Philadelphia; Dr. C. F. Shattuck, Boston; O. T. Phythian, Cincinnati; Dr. St. V. Martinitz, Cedar Rapids, Ia.; Medical Herald Co., St. Joseph, Mo.; Dr. Frank P. Peck, Mount Pleasant, Ia.; Allen H. Still, J. H. Bates, New York; Dr. Geo. C. Webber, Millbury, Mass.; Dr. J. L. Hilmantel, Milwaukee; Dr. Chas. C. Browning, Adrian, Ill.; Johnson Eliot, Washington; Battle & Co., St. Louis; R. L. Watkins, Prospect, O.; G. H. Whitcomb, Greenwich, N. Y.; Medical Press Co., Philadelphia; Reed & Carnrick, New York; Dr. W. H. Dunlop, Syracuse, N. Y.; Woman's Medical College of New York; Dr. H. O. Walker, Detroit; Jas. I. Fellows, New York; Dr. W. H. Geddings, Aiken, S. C.; Ward Bros., Jacksonville, Ill.; Dr. John G. Ames, Marblehead, Mass.; Miner & Elbreg, Indianapolis; Dr. N. Senn, Milwaukee, Wis.; G. E. Stechert, New York; Dr. John H. Chew, Chicago; R. C. Flack, Bound Brook, N. J.; George Chaffee, Warren Centre, Pa.; Dr. W. W. Skinner, Lutz & Movius, Lehn & Pink, New York; Dr. Isaac Kay, Springfield, O.; Dr. James Tyson, Philadelphia; Dr. C. R. Henderson, Yazoo City, Miss.; Dr. C. Wilbur, National Military Home, O.; Dr. P. B. Porter, New York; Dr. Florentine, East Saginaw, Mich.; J. H. Chambers & Co., St. Louis; Dr. D. S. Campbell, Detroit; Dr. J. B. Murdoch, Pittsburgh; American & Continental Sanitas Co., New York; Dr. James Tyson, Philadelphia; Nichols & Shepard, Three Rivers, Mich.; Dr. J. T. Wilson, Sherman, Tex.; Dr. J. Chris. Lange, Pittsburgh; Dr. Wm. G. Parrish, Burlington, N. J.; Samuel G. Sloane, Chicago; Dr. G. W. Stockwell, Knoxville, Mo.; Lambert Pharmaceutical Co., St. Louis; Dr. Thos. H. Manley, New York; Dr. C. W. Stevens, Charlestown, Mass.; Cincinnati Polyclinic; Dr. E. S. King, Sweet Home, N. C.; F. A. Davis, Philadelphia; Dr. J. A. Southard, Fort Smith, Ark.; Dr. J. R. Briggs, Dallas, Tex.; Dr. Geo. P. Lee, Merced, Cal.; Thos. F. Goode, Buffalo Lithia Springs, Va.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from June 15, 1889, to June 21, 1889.

By direction of the acting Secretary of War, the following changes in the stations of officers of the Medical Department are ordered:

Major Albert Hartsuff, Surgeon, is relieved from duty at Ft. Hamilton, N. Y., and ordered to Ft. Omaha, Neb.

Major J. M. Brown, Surgeon, relieved from duty at Ft. Omaha, Neb., and ordered to Ft. Meade, Dakota.

Capt. W. C. Shannon, Asst. Surgeon, relieved from Ft. Meade, Dak., and ordered to Ft. Yates, Dak.

First Lieut. Francis J. Ives, Asst. Surgeon, relieved from duty at Ft. D. A. Russell, Wyo., and ordered to Ft. Lyon, Col.

Capt. J. F. Philips, Asst. Surgeon, relieved from duty at Ft. Lyon, Col., and ordered to Ft. Crawford, Col.

First Lieut. Walter D. McCaw, Asst. Surgeon, relieved from duty at Ft. Crawford, Col., and ordered to Ft. McPherson, Atlanta, Ga. Par. 9, S. O. 136, A. G. O., Washington, D. C., June 13, 1889.

Capt. Robert J. Gibson, Asst. Surgeon U. S. A. (Ft. Trumbull, Conn.), is designated as medical officer for the encampment at Fisher's Island, N. Y., and he will proceed to Fisher's Island, N. Y., August 1, 1889, and report to the commanding officer for duty at that post. Par. 5, S. O. 133, Hdqrs. Div. of the Atlantic, June 13, 1889.

Capt. Walter W. R. Fisher, Asst. Surgeon, leave of absence for one month granted by S. O. 30, c. s., Dept. of California, and extended fifteen days by par. 3, S. O. 37 c. s., from these Hdqrs., is further extended fifteen days. Par. 1, S. O. 41, Hdqrs. Div. of the Pacific, San Francisco, Cal., June 12, 1889.

By direction of the acting Secretary of War, the following changes in the stations of officers of the Medical Dept. are ordered:

First Lieut. Benj. L. Ten Eyck, Asst. Surgeon (recently appointed), ordered to Ft. Leavenworth, Kan.

Capt. Jno. de B. W. Gardiner, Asst. Surgeon, relieved from duty at Ft. Leavenworth, Kan., and ordered to Ft. Reno, Ind. Ter.

Par. 3, S. O. 132, A. G. O., June 8, 1889, is amended so as to direct First Lieut. P. G. Wales, Asst. Surgeon, to report to Ft. Huachuca, Ariz., for duty in place of Presidio of San Francisco, Cal.

Capt. M. C. Wyeth, Asst. Surgeon, relieved from duty at Ft. Huachuca, Ariz., and ordered to Ft. McDowell, Ariz.

First Lieut. Leonard Wood, Asst. Surgeon, relieved from duty at Ft. McDowell, Ariz., and ordered to Presidio of San Francisco, Cal. Par. 2, S. O. 138, A. G. O., June 15, 1889.

First Lieut. Henry S. T. Harris, Asst. Surgeon, granted leave of absence for two months, by direction of the acting Secretary of War. Par. 13, S. O. 140, A. G. O., June 18, 1889.

EXTRACT.

By direction of the acting Secretary of War, the following changes in the stations of the Medical Department are ordered:

First Lieut. Benjamin L. Ten Eyck, Asst. Surgeon (recently appointed), will proceed from New York City to Ft. Leavenworth, Kan., and report for duty to the commanding officer of that post. Par. 2, S. O. 138, A. G. O., Washington, D. C., June 15, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending June 22, 1889.

Medical Inspector Grove S. Beardsley, granted a year's leave of absence, with permission to leave the United States.

Surgeon N. M. Ferebee, detached from special duty at Naval Academy, and wait orders.

Asst. Surgeon George Rothganger, ordered to the Naval Hospital at Mare Island, Cal.

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ADDRESSES.

SURGICAL INTERFERENCE IN FRACTURES OF THE SPINE.

Delivered in the Section on Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association, June 25, 1889.

BY N. P. DANDRIDGE, M.D.,

OF CINCINNATI, O., CHAIRMAN OF THE SECTION.

My first duty is to express my appreciation of the honor I have received in being selected to preside over the meetings of this Section. This honor brings with it, however, the embarrassing conviction that I lack many of the qualifications necessary and essential for properly carrying out the work for which I have been chosen. The ready co-operation that I have received in the effort to organize the work of the Section, and the great interest manifested in its success on all sides have contributed to make the experience of the past months among the pleasantest of my life, and I only trust that in looking back upon the completion of our meeting you may all be able to regard it with equal satisfaction. When I consider the characters of the papers you will listen to, and remember the prominence of their authors, and the large amount of learning and varied experience they represent, I may be excused for much misgiving as to my own ability to contribute anything which will be at all worthy of your consideration, and which will not suffer by comparison with the contribution of those whose opportunities have been so much wider than my own. Indeed, if I succeed in exciting your interest, and holding your attention, I fear it will be more from the importance of the subject itself rather than from anything of value I may be able to offer either in the way of original thought or in summing up the recorded work of others.

I have selected for my topic "Surgical Interference in Fractures of the Spine," and have been led to its selection partly by the fact that an unusual number of these injuries have fallen under my care during the last year, and will thus enable me from recent experience to present many of the salient features of the subject, and also largely from the fact that the recent achievements of Horsley, Macewen, Abbe, and others in this

field have opened up new avenues of progress, and have rendered it necessary to recast and revise conclusions which seem fixed on definite and legitimate foundations. Fresh impetus has certainly been given to active operative interference in all forms of spinal injury and disease, and while it is certainly true that the result of these new surgical triumphs must necessarily and properly enlarge our therapeutic resources in these most trying cases, it is also equally certain that without due regard for the recorded experience of the past we are likely to retard true progress by rash and unreasonable interference.

Indeed, if I mistake not, the indications are already apparent that operations upon the spinal canal will soon become popularized, and this one of the last of the great cavities of the body to be interfered with will become in the near future the frequent scene of either surgical success or failure. It is for this reason that I feel the time is opportune for a fresh discussion of the questions involved in determining the how, and the when, of surgical interference in fractures of the spine. In speaking of fracture it is to be understood that I make no sharp distinction between fracture and dislocation, but consider alike all forms of injury to the column resulting in more or less damage to the cord. Any conclusions which may be reached at this day must necessarily be provisional, for the date is not yet at hand by which we can definitely settle many of the points involved. I shall confine myself in this discussion to the question of active interference in fracture, but as the fresh impetus which has been given to work in this subject dates back to the successful removal of a spinal tumor by Horsley, and the operations for pressure symptoms in cases of Pott's disease by Macewen, it may be well to consider briefly how far these cases are analogous, and how far the deduction from one class can be safely applied to the other. In Horsley's case there was present all the symptoms of an advanced transverse lesion of the cord by which all power of conduction was abolished. This condition was due to a tumor which had produced an indentation, or depression, which penetrated almost through one lateral half of the cord. It should be recalled that this condition of the cord was due to a slowly increasing pressure—a

pressure which could not suddenly destroy the conducting tracks. The removal of this tumor was followed by a complete restoration of all the functions which had been lost.

In considering the question of operation for tumor, it must be remembered that removal is our only resource, and that we have no other method of treatment which promises any benefit whatever. In cases of Pott's disease the conditions in many respects are much the same, though they differ in some essentials. The narrowing of the canal by which pressure is made on the cord is not often due to simple changes in the bony walls, or to the acuteness of the angle caused by the curvature. It is generally due to the thickening of the membranes, the development of granulation tissue between the bones and dura, or to the accumulation of pus or other inflammatory products.

As a result of hæmorrhage or the penetration of the canal by an abscess pressure symptoms may be suddenly developed. But in all these cases the compressing body is of such a nature that the elements of the cord are not divided, but their vitality is slowly or suddenly compromised by interference with nutrition or by secondary degeneration. The resulting condition may be exactly the same as in the case of tumor or fracture—paralysis below the point of pressure more or less complete—exaggeration or loss of reflexes—retention or incontinence of urine and fæces, and the ready occurrence of bed sores and other trophic changes; but while the symptoms present may be exactly the same as in the case of tumor and due to a compressing body, the question of treatment is one which occupies an entirely different position. In the case of tumor without operation we are entirely powerless—in Pott's disease it is otherwise, for it is a matter of daily experience that the most serious and threatening symptoms may disappear spontaneously. Sensation and motion are both often rapidly recovered after the application of the plaster jacket, or following the administration of the iodide of potash. But in certain of these cases the organization of the inflammatory products, and the thickening of tissue reaches such a degree that they may be fairly compared to a tumor growth and quite beyond the reach of removal except by the knife. Charcot has demonstrated that this condition is most apt to occur opposite the point of greatest curvature in the spinal canal. In such cases Macewen has first shown that operative interference may be followed by most brilliant results where the conditions are apparently helpless, and where continued treatment of various kinds has been entirely without success.

In the second case he reports after removal of the lamina he found a connective tissue tumor so closely adherent to the dura that a part of that membrane was removed with it. The cord was

compressed to one-half its normal size, but on removal of pressure began to pulsate, and within a few hours there was notable improvement in the warmth and lividity of the limbs. This patient regained entire use of the limbs after the existence of paralysis lasting over eight months.

It will be of interest in this connection to examine the results obtained in cases of resection already reported. Ten cases are available for this purpose. Unfortunately many of the cases are so imperfectly recorded that their value is greatly diminished. Certain positive facts of value can, however, be determined. Mr. Horsley in a recent letter reports restoration of power after complete paralysis for six or seven years. In Macewen's first case paraplegia of two years' standing with bed sores and incontinence was entirely relieved by the removal of the arches of the fifth, sixth and seventh dorsal vertebræ. These cases have an important bearing on the subject we are discussing, and are in themselves a partial answer to the argument advanced for early operation—that delay will necessarily compromise all chances of success. They certainly show that the cord after long continued compression, severe enough to abolish all conducting power may, by relief of pressure, again recover its functions. Trephining the spinal column in Pott's disease does not seem to be a very serious operation. Out of the ten cases one died in twenty-four hours, one in a week, and one of general tuberculosis in seven months. It certainly promises a field of usefulness in properly selected cases, and will, I believe, rescue some where all other means would prove unavailing. The danger is that many patients will be subjected to the trephine in whom slower and less brilliant forms of treatment would produce better results with less danger of disastrous consequences. In this connection it is a matter of interest and importance to determine after what length of time we must give up all hope of the disappearance of paraplegia in Pott's disease. I desire to place on record a case bearing on this point, in which after complete paraplegia for more than three years and a half voluntary power returned, and six months later the child was able to walk with a slight support. This child, now 7 years old, has been under continuous observation for over four years at the Children's Hospital, Cincinnati, with marked curvature in the upper dorsal region. On admission there was complete loss of power in both lower extremities, but neither incontinence nor bed-sores. This condition continued without improvement until six months ago when motion began to appear at first in the thigh muscles, and now he is able to stand, and with slight aid to walk. The improvement has been continuous and complete restoration seems probable. For nearly two years the treatment has been a little more than proper nourishment and good hygienic surround-

ings. The case has made a deep impression on my mind as showing the power of recuperation possessed by the cord.

Let us now consider how far the lesions present in fractures are similar to those we have just been considering. In fractures of the bodies of the vertebræ with displacement the antero-posterior diameter of the canal may be narrowed in any degree up to complete obliteration, and the cord may be injured in any degree up to a complete division—the membranes being either contused and lacerated, or entirely uninjured. It is stated by Hutchinson that direct compression of the cord by displaced bone is not often seen at the autopsy in these cases. This is due to the fact that the greatest amount of displacement is momentary, and that correction is effected in the subsequent removal and handling of the patient. In fractures involving the lamina the bone may or may not be depressed sufficiently to make pressure on the cord. Extra or intradural extravasation of blood, or hæmorrhage into the cord itself may occur as the immediate result of injury to the column without any evidence of displacement being present. Within a few weeks a case illustrating this fact has come under my care.

Case 1.—An adult fell backward from a ladder a distance of five or six feet, and struck on the back of his head; when seen in the hospital he was evidently much stunned though not unconscious. He was able to move all four extremities—the limits of sensation could not, however, be determined. The pulse was quick and small, the breathing hurried and shallow, and the face somewhat flushed. Movement of the head caused pain, particularly in flexion. No deformity could be detected in the spine. When seen in the evening the breathing was rapid, and almost entirely abdominal, and the face deeply flushed; movement in the extremities still existed. Death occurred eighteen hours after the accident. At the post-mortem examination a partial dislocation forward of the second cervical vertebra was found with slight displacement. The spinal canal was laid open from behind—the cervical arches were intact, the membranes were untorn and normal, and on laying them open no evidence of injury to the cord could be seen as it lay in the spinal canal. The cord was removed, and when laid on the table presented no evidence of injury until by passing the finger along its surface a transverse section of softening corresponding to the height of the displaced vertebra was discovered. The cord was now divided by a longitudinal antero-posterior section. Slight softening involved the entire thickness of the cord, and within this area on either side a small clot of recently extravasated blood was found. These clots were found on either side of the central canal, and were so centrally situated that on the surface of the cord

there was no evidence of their existence. The persistence of motor power in the four extremities showed certainly that these lesions had not entirely destroyed the conducting power of the cord. The cause of death must have been due to interference with the origin of the phrenic nerve. In a less vital portion of the cord there is no reason why such a lesion should have suddenly terminated life, and it seems not unreasonable to suppose that complete restoration of function might have followed absorption of the clots, and it is not improbable that in cases of recovery after paralysis in spinal injury, such lesions may frequently exist. Repair under such circumstances will certainly not be aided by any operative interference. The changes which follow fracture may result in thickening of the membranes and the production of more or less inflammatory tissue, or pus within the spinal canal, sufficient to cause marked pressure on the cord—a pressure which in some cases may explain the continuance, or reappearance, of the paralytic or trophic symptoms. These cases then approximate the condition found in Pott's disease, suffering from pressure symptoms, plus the amount of the original, and unrepaired damage to the cord itself. The question of operative interference in spinal injury must be considered in reference to interference immediately after the receipt of injury, and interference deferred until the amount and character of permanent disability can be determined. The solution of these questions involves a consideration of the course and results of fracture treated without recourse to operation. It is well known that not only a considerable number of these cases escape death, but entirely recover all their functions, even after the existence of paralysis, incontinence, and bed-sores existing for a variable length of time. In a valuable paper Burrill has investigated the results of all the cases which have occurred in the Boston City Hospital—eighty-two cases in all—of which eighteen survived. Divided into regions we find twenty-eight cases of fracture of the cervical vertebrae gave two recoveries—twelve cases of fracture of upper dorsal vertebræ, six recoveries—nineteen cases of fracture of lower dorsal, one recovery—twenty-three cases of fracture of lumbar vertebræ, ten recoveries. Of the sixty-four fatal cases thirty-five died within five days—eight from five to ten days, and seven in from ten days to one month. Five of these cases were submitted to operation—all of which were promptly fatal. In the eighteen who survived the result was good in nine, and in nine complete disability remained permanent. The especial value of Burrill's paper is that it is based on the entire number of cases treated in a single institution, and gives, therefore, more reliable data for deductions, than statistics made up of isolated cases. Favorable results always obtain undue prominence under

such circumstances. It is apparent from the above figures that 21 per cent. of fractures of the spine survive, and that over 10 per cent. make a satisfactory recovery.

Of the fatal cases a very large proportion die in the first few days—a fact of importance in estimating the danger of operation, the high mortality of which in cases of recent injury can not properly be attributed to the operation itself, but is largely due to the concomitant injury.

It is further evident that while treatment is successful in preserving the lives of a considerable number, one-half the survivors are left completely disabled, so that any addition to our therapeutic resources must be eagerly welcomed. I can best present the points involved in the question of treatment of spinal fracture by briefly referring to the more salient features of the cases which have come under my care in the last few months, and describing the methods adopted in each and the results obtained.

In addition to the case of dislocation above reported I have had in the time specified five cases of fracture of the dorsal spine; in three of these cases the plaster jacket was applied within a short time of the accident, and in two the result was entirely satisfactory, but in the third only partially so—in one an air-bed was used with persistence of the paralysis and incontinence and the development of extensive bed-sores. This case at the end of five months was trephined—the 10th, 11th and 12th dorsal and first lumbar arches removed. The last case was treated on an ordinary bed, great care being exercised to avoid pressure, and at the end of several months had gained control of bladder and rectum, complete restoration of sensation, and improvement of motor power. The disabilities which remained were markedly improved by systematic suspension several months later.

Case 2.—An adult, as the result of forcible bending of the body in driving under a low archway, suffered a fracture of the spinous process of the 11th dorsal vertebra, which could be felt movable and somewhat displaced under the skin. There was no paralysis of motion or sensation or any disturbance of the function of the bladder or rectum. Every movement of the body was painful and there was entire inability to sit up in bed. A plaster jacket was at once applied by means of the hammock suspension and was followed by immediate relief of pain and by ability to move about and sit up in bed. In five weeks the patient walked out of the hospital quite well.

Case 3.—A carpenter fell 25 feet from a scaffold, striking his back; the fall produced at once complete paraplegia. He came into the hospital three or four days later. Paralysis of motion and sensation was complete nearly to a level with the umbilicus, and there was retention of urine. The fourth and fifth dorsal spine were slightly promi-

nent and were painful on pressure, and movement of the body caused pain in this part of the column. The jacket was applied in the hammock at once, and immediately gave a great deal of comfort, enabling the patient to move in bed and sit up without pain. For seven or eight weeks it was necessary to use the catheter, when expulsive power was regained and the pus and mucus disappeared. During the first few weeks the bowels were only moved by injection. Sensation began to appear in the lower extremities after seven or eight weeks and was soon followed by voluntary motion. This improvement continued and in eighteen weeks the man was able to walk. Six months later there remained only a slightly ataxic gait and the man was able to resume work as a carpenter.

In one other case the jacket was applied on the fifth day after fracture in the lower dorsal region. At this time there was paralysis in both lower extremities, retention of urine and involuntary escape of feces. The jacket afforded comfortable support. Within a few weeks a bed-sore developed over the sacrum and incontinence of urine and cystitis followed. In four months sensation had completely returned, the thigh muscles could be voluntarily moved, but there still remained paralysis of the legs, and the incontinence was as bad as ever and has continued up to the present time unimproved.

The application of a plaster jacket in the treatment of fracture of the spine is certainly no novelty, as many cases have been reported and its use has materially improved the ultimate results as well as adding greatly to the immediate comfort of the patient. The method of application I regard as of great importance, and sufficient appreciation, has not, I think, been shown to the use of the hammock suspension, as first suggested by Mr. Davy. An extensive experience in the use of the hammock in the application of the plaster jacket for Pott's disease has given me great confidence in this method wherever a spinal support is required, and in cases of fracture it presents special advantage. In a case described by Burrill, in which suspension was employed, the pain is described as so agonizing that the jacket was completed with great difficulty, and I cannot but think that there must be at times danger where the continuity of the column has not been impaired. One advantage only I can see that suspension can possess over the hammock, and that is that the weight of the body may act as an extending force in overcoming any displacement. In Burrill's case sensation was felt in the toes the moment the body was free from the bed. But extension can be perfectly well practiced with the hammock, and the further advantage of an anæsthetic can be obtained with safety while the patient remains in a horizontal position.

The method of using the hammock is very sim-

ple; a piece of strong muslin as wide as the patient's body and about 15 feet long is stretched out on the bed beside him, a proper undershirt is applied and the patient is gently rolled over until he lies prone on the hammock. One end is now securely knotted to a strong hook in the wall and the other end attached by a pulley to a fixed point at the opposite side of the room and the patient is then swung free from the bed. After protecting the bony points, the plaster bandages are applied including the hammock, and the suspension continues without any inconvenience to the patient until the jacket is perfectly hard. In none of the cases in which this method has been used has there been any pain complained of, and in one of the fractures the patient compared it most favorably with the discomfort of a former suspension.

In one case, still under observation, decided benefit has been obtained in improving the condition some months after fracture by systematic suspension.

Case 4.—An adult, æt. 30, carpenter, fell 30 feet, striking his back and producing complete paraplegia—motion and sensation being both abolished. For five weeks it was necessary to use the catheter, when expulsive power returned; for about the same length of time the rectum was evacuated only by the use of injections. Cystitis soon developed, bed-sores occurred on the heels and over the right trochanter. In six months he had so far improved that complete control of the bladder and rectum was regained. Sensation throughout returned and there was marked improvement in motion. In the right leg there was fair control of the thigh muscles; in the left scarcely any voluntary motion at all. There was no voluntary motion in leg or foot muscles on either side. The reflexes were greatly exaggerated and contact of feet with the floor or slight tapping of the finger over thigh or patella produced such violent contractions of all the extensors of the leg that the knees could not be flexed for some minutes. At this time a marked curvature in the lower dorsal region, the prominence involving several vertebrae, and in this condition he was admitted to the Cincinnati Hospital, for the purpose of trying suspension. He was suspended twice daily, at first for five minutes at a time, and then the time was much lengthened. The benefit was evident from the first. The exaggeration of the reflexes soon showed diminution in intensity and there was improvement in voluntary motion.

The treatment still continues and it is too soon to determine the ultimate result, but thus far the patient's condition seems to show that we have in suspension the means of further improvement where recovery has fallen short of complete success. The range of its usefulness can only be determined by further trial. This method of treatment is still so new that it is not worth while

to speculate on the manner in which suspension acts. It may, however, be suggested that repair in fracture of the vertebrae often falls short of complete bony union, and in these cases a suspension may possibly act by straightening the canal and thus relieving pressure.

In the admirably analyzed tables of fracture of the spine in Ashurst's essay the great advantage of immediate correction of the deformity and displacement by extension and manipulation where the cervical vertebrae are the seat of injury is prominently enforced, and later experience has fully confirmed the conclusions of the author in this respect, so that the benefit of this practice may be considered so fully established that it does not require further argument to support it.

I have had one case in which I have trephined the spine and removed the 10th, 11th, and 12th dorsal, and first lumbar arch. The operation was undertaken five months after fracture in the dorso-lumbar region. There was present at the time extensive bed-sores, incontinence of feces and urine and complete paraplegia.

Case 5.—F. H., æt. 27, entered Cincinnati Hospital November 1, 1888. Four days before he fell through a hatchway and found himself unable to rise. On admission there was complete paralysis of motion and absence of sensation as high as the crests of ilia, and inability to void urine. Incontinence developed within a few days, with involuntary discharge of feces. The patient was at once placed on an air-bed, but in spite of the most assiduous attention cystitis developed and extensive bed-sores appeared over the sacrum and along the posterior aspect of both legs within two or three months. Sensation returned to the middle of the thighs, but there was no improvement in motion. On return to hospital service, April 1st, five months after the accident, I found no further improvement, but on the contrary spreading bed-sores and the cystitis, incontinence and paralysis unchanged. The operation of exsection was explained to the patient, and the possible chance of benefit which it offered, and after consultation with his friends he decided to accept it. April 10th, with the assistance of the surgical staff of the hospital, the spinal canal was opened. A free incision was made over the spinous processes, the center of which was the 11th dorsal, and the muscles were rapidly dissected off, so as to fully expose the lamina on either side; bleeding was controlled by packing the wound with sponges. The spinous process of the 12th dorsal was first cut away with strong cutting forceps and the trephine then applied and the canal opened. The arch of the 11th dorsal and first lumbar was similarly removed. The dura thus fully exposed was covered with a thin layer of rather closely adherent connective tissue, which was scraped away with a blunt spoon; no pulsation was seen and the cord appeared normal to the touch, except at the upper

part exposed, where it seemed diminished in consistency, and as the membrane appeared closely applied to the arch above this was also removed. No condition causing compression was discovered, and the dura was not opened. The wound was closed throughout, except at the lower end, where a large drainage-tube was inserted, reaching to the bottom of the cavity, and a voluminous dressing of gauze and absorbent cotton applied. The following day this was saturated through by the discharges and was renewed; on the fourth day the dressing was again changed, and as the discharge was small the drainage-tube was removed. This I am now satisfied was a mistake, and I attribute the suppurative which occurred and the delay in healing of this part of the wound to this fact. Except about the tube the wound healed by first intention. For several days there was slight fever and the bed-sore over the sacrum increased slightly from a slough. Eight weeks after the operation the wound was entirely healed. The general condition was certainly better, the urine was almost perfectly clear and of acid reaction, and some of the bed-sores were entirely healed, and all improved and contracted. Incontinence still persisted, and there had been no improvement in either sensation or motion. So far as the operation is concerned I consider that it has been entirely negative, and that the improvement which has ensued has been due to the assiduous care and attention the man has received. This result, however, I do not feel should discourage further effort under proper conditions. Indeed, earlier operation I believe is indicated, and sufficient success has been attained by others to more than justify further effort in the surgical interference in these cases.

The operation is not difficult, and is now shown to be not very dangerous, and where continued treatment has failed to afford relief resection should be undertaken without very great delay, for even where complete success has not been attained the operation appears to have a marked influence in controlling cystitis and incontinence, and in hastening the healing of the bed-sores, results which amply compensate for the small amount of danger. Ashurst, in the essay referred to, has presented the result of resection of the spine up to that time, and asserts that there is "no well authenticated case of cure after the operation when undertaken for fracture." Surgical writers previous to the reports of Horsley and Macewen are unusually unanimous in condemning the operation. Among the latest, Page, in Heath's Dictionary, says that "it is an operation not within the range of practical surgery." To this general pessimistic view Erichson is a notable exception, and largely on the result of Gordon's case in Dublin advocates further trial. In this case sixty-seven days after injury the arches of the 12th dorsal and first lumbar vertebræ were removed for

fracture of the lamina of the latter. The operation was undertaken for the relief of incontinence and cystitis, complete paraplegia and extensive bed-sores, and resulted in much benefit. The cystitis disappeared, entire control of the bladder was regained, the bed-sores healed, sensation returned, and the paralysis of motion was greatly improved.

Since the appearance of Horsley's paper I find 10 cases of trephining the spine for fracture. Many of these cases are most unsatisfactorily reported, but several points of importance and interest may be gathered from them. Macewen reports a case, operated on five weeks after accident, in which the 12th dorsal and first lumbar arch were removed, the former being fractured, and complete success obtained. Horsley removed the 11th and 12th dorsal after the appearance of bed-sores, with marked benefit to the patient, but without the complete disappearance of motor paralysis. In no case in which operation has been performed within a few hours of injury have I been able to find a complete success reported. Most of the patients have lived, some slight improvement noted, but in none has there been a disappearance of the paralytic symptoms. In determining the propriety of immediate operation the question may be asked whether in fracture of the bodies of the vertebræ removal of the arches and the severance of the ligaments must not necessarily further weaken the column as a whole, and so render displacement more liable to occur. Such an objection would not exist after partial or complete consolidation.

In all cases where decided benefit has followed fracture of the arch only has been reported. It has been urged that where fracture of the body is present, with the narrowing of the canal, that removal of the lamina will permit the cord to expand backward. I have not been able to find recorded any case where this has been demonstrated.

Experience is now rapidly accumulating, however, in these cases, and may soon fully confirm these suggestions. As for technique of the operation Horsley's description is so complete that little can be added. The condition demanding the opening of the dura requires investigation. Such a step adds to the gravity of the operation, but failing to do so in some cases may possibly account for want of success. The conclusion to which this discussion points is this: that in injury to the spinal column with the symptoms indicating damage to the cord, experience has already shown that a satisfactory result may be obtained in a considerable proportion of cases, and that in the majority of those that recover after the existence of paralysis, retention or incontinence, improvement only begins after some weeks, or possibly after some months. Recent experience has certainly shown that resection of the spinal arches is not so

dangerous or difficult as was once supposed, and, furthermore, that it is capable of dealing successfully with cases of pressure on the cord of long duration after other methods have completely failed. It is certain, therefore, that we have in operation an additional resource in fractures of the spine. I cannot but feel, however, that the tendency at present is to push to an extreme the analogy between tumor and Pott's disease producing symptoms of paraplegia, and cases of fracture, in determining the question of operative interference where the symptoms do not yield at once to a correction of the displacement, is likely to result less satisfactorily than trusting to the other methods longer in use. At the same time a sufficient number of cases exist to show that under certain conditions resection will save life and remove symptoms worse than death itself.

From the above I feel justified in presenting the following provisional conclusions from which doubtless many will dissent:

1. In fractures of the cervical vertebræ there is indicated immediate reduction of any displacement by extension and manipulation under an anæsthetic, followed by continuous extension and immobilization.
2. In all fractures of the dorsal or lumbar spine involving the bodies or the arches, with or without evidence of injury to the cord, the immediate application of the plaster jacket by the hammock suspension preceded, if there is evident displacement by an extension, under an anæsthetic.
3. When symptoms indicating injury to the cord persist without improvement resection is indicated.
4. Immediate operation would be indicated where there is marked depression of the arches with symptoms of paralysis.
5. Long continuance of the symptoms is not in itself a contraindication to operation.
6. We have in suspension the means of alleviating some of the sequelæ of fracture of the spine.

POPULAR PROGRESS IN STATE MEDICINE.

Delivered in Section on State Medicine at the Fortieth Annual Meeting of the American Medical Association, June 25, 1889.

BY J. BERRIEN LINDSLEY, M.D.,

OF NASHVILLE, TENN., CHAIRMAN OF THE SECTION.

The Section on State Medicine has two feet upon which it securely stands—law and science. My immediate predecessors as Chairman of the Section have noted the recent progress in science as connected with its practical work. On this occasion I shall, with great brevity, note progress in the other direction. As in America all law depends upon the sovereign will of the people, who are at once governors and governed, my topic is

substantially "Popular Progress in State Medicine."

This progress is one of the great features of the present century, which is as signally characterized by the application of the physical forces to the daily uses of man as was the fifteenth by the unfolding of the globe's map. Thirty years ago sanitary ideas, problems, reforms and work were unknown, or at all events unmentioned. To-day, outside of partisan politics with its perquisites, no topics engross so large a share of public attention as do those belonging to practical sanitation.

As evidence of the recent and rapid progress State Medicine has made in the United States, the following substantial proofs may be cited:

STATE BOARDS OF HEALTH.

The first State Board of Health created was that of Massachusetts, at a date no longer ago than 1869. From a table very carefully compiled by Dr. Geo. Homan, Secretary of the State Board of Health of Missouri, we learn that, in 1888, twenty-nine States maintained Boards of Health, by an annual expenditure of more than half a million dollars. Thus a major portion of the American people are becoming acquainted with the connection between law and health.

In most instances these Boards have high powers. In all cases they exercise a great educational influence.

Voluminous reports, prepared with care, and with special adaptation to the several localities, are liberally distributed. At this date the series issued by those two advanced States, Massachusetts and Michigan, constitute a cyclopædic collection of treatises upon all the pressing questions of public sanitation. The Illinois Board has exerted a lasting influence upon medical education by its persistent efforts to protect the people from imposition. Perhaps it is not beyond fact to say that a very few years of legal effort by this single State Board has done more to elevate medical education than all the advisory and hortatory resolutions of our own great Association in forty years. Law is a rapid and efficient educator. No less than eight of these twenty-nine State Boards issue monthly publications containing reports and information from all localities within their bounds. These periodicals are circulated by the thousand, and tend materially to advance the work. All date within the last four years.

CITY AND LOCAL BOARDS.

The progress, influence, powers and expenditures of city Boards of Health in the recent decade is even more remarkable than in the case of State Boards. I have not at hand such an analysis of their work as that furnished by Dr. Homan, above referred to. However, a single topic under their care reveals the wide scope of their functions and the immense results which must in a few years

ensue. Healthy homes for all the people is becoming their watchword and the demand of their constituencies. To exemplify this point time forbids. The work done by the New York, Boston and Nashville Boards may be cited in proof.

A wonderful illustration happened in Europe only a few days ago (June 15), when the King, Queen and Crown Prince of Italy inaugurated the improvement of the sanitary condition of Rome. This grand work will require ten years for its completion. Many new streets will be opened and 17,000 houses be demolished.

The American Democracy long since voted itself public schools by means of which the keys of knowledge are placed in the hands of all. Witness Massachusetts, which for its last scholastic year voted without grudging the royal sum of \$7,500,000.

The American Democracy will beyond a doubt, long before the next century becomes old, vote that each man, woman and child of its many millions, everywhere upon its imperial domain, shall breathe the pure air of heaven and enjoy that bright sunshine which is the truest emblem of the Divine Giver of all life.

Ever since my student days in that loved Alma Mater, the glorious old University of Pennsylvania, have I, as opportunity offered, inspected the dwellings of the masses in our large cities, and always with sadness and compassion, that so many among them fared no better than like classes in the Old World. Now, when these scenes meet my eyes, it is with the comforting reflection that such disgraces upon our vaunted civilization will soon pass away.

VOLUNTARY ASSOCIATIONS.

These are rapidly becoming a power. On April 18, 1872, in the rooms of the New York City Board of Health, seven pioneers founded the American Public Health Association, which now counts its membership by the hundreds. This Association has published fourteen substantial and handsome volumes, permanent memorials of the best thoughts of very many of the most eminent practical sanitarians in America. By the thoughtful liberality of a single member, Mr. Henry Lomb, of Rochester, N. Y., it has sent many thousand copies of capital essays among classes specially needing and prizing such instruction.

The Newport Sanitary Protection Association is a model in its way, which in a very few years will be widely copied in all parts of our great Republic.

The New York Ladies' Sanitary Association, recently formed, has some 350 members. It has taken hold of such great subjects as defects in public school buildings, the removal of garbage, and the like. Though in its infancy, it is already noted for good work.

INCREASED RESPECT BY RULERS.

This is very remarkable, and has done much to give our cause prestige with the people. The sayings of D'Israeli the gifted, and of other eminent British statesmen, have become axioms. No greater tribute, however, has ever been paid to State preventive medicine than the idea recently advanced by an American Secretary of State, looking to the peaceable acquisition of a great island now a plague-spot, a terror and a menace to our people, that so it may come under the redeeming influence of sanitary science.

THE BARRING OUT OF CHOLERA.

In 1884 and 1885 France, Spain and Italy were visited by an epidemic of Asiatic cholera which alarmed all Europe, and created great uneasiness in our own country, specially in the vast Interior Valley. In all previous visitations of this exotic pest it was allowed free course. On this occasion, however, it was met by the organized hosts of scientific physicians acting with the power of law, and was stopped short in its career. This fact has given the American public great respect for and great confidence in State preventive medicine, as I know from conversing with many outside our profession.

GREAT MONEYED INTERESTS AROUSED.

Yellow fever epidemics, and even yellow fever scares, are now of National importance because of their disastrous influence upon inter-State commerce. The scare of last year damaged more or less all the railway companies with extensive lines in the South, probably more than the really great epidemic of 1878, which was so fatal to life. This because of the increase in mileage of these railroads. During the continuance of this scare and consequent embargo upon commerce, very many railroad and mercantile men studied and discussed the perplexing topic of quarantine. These men represented millions upon millions of capital and multiplied thousands of employes. One sentiment prevailed among them, respect for State Boards, abhorrence of local shot-gun quarantines, and a desire for a central Federal head at Washington which should coöperate with State Boards and harmonize quarantine rules. There are no better auxiliaries in public health work in the South than our railroad officials. The depopulation of Decatur, Ala., when yellow fever was declared epidemic, as conducted by the management of the Louisville and Nashville Railroad, was a model for promptness, efficiency and humanity.

The recent astounding calamity of May 31, in Pennsylvania, has also awakened a widespread feeling of the necessity of a Federal hand which in such unexpected and destructive calamities shall be ready to aid local authorities with that promptness and wealth which great Governments alone can exhibit. In such times of trouble there

should be no necessity for the slow, uncertain and costly agency of voluntary contributions from individuals among 65,000,000. Our Government is a Commonwealth of States, and at its Capital has all the organization for mutual insurance against earthquakes, floods, and pan-epidemic pestilence that can possibly be needed.

LIFE INSURANCE AND VITAL STATISTICS AND SANITATION.

As it respects numbers interested and capital involved, life insurance is second to no business in America. Without vital statistics it walks in darkness. With local sanitation it is intimately concerned. A company at Hartford has within ten years sent an accomplished physician twice to Tennessee on an inspecting tour, whose reports give an admirable summary of the sanitary condition of that State, though never published. This kind of inspection is more frequent than health officers are aware. It is impartial and meant for business uses alone. Unhealthy countries are embargoed by life insurance companies, for a single epidemic may destroy the resources of years.

THE BUSINESS INTERESTS OF AMERICA NOW DEMAND THE UNITED STATES PUBLIC HEALTH SERVICE.

This topic for twenty years past has been much discussed in medical associations, National and State; also in sanitary conventions of all kinds. Various plans have been proposed with widely different features. At one time, 1879, a National Board of Health was created, from which much was expected. These expectations were disappointed, and perhaps inevitably, since this Board was not in harmony with the machinery of the United States Government. Perhaps, also, because it was mainly established under the spur of an epidemic disease which affected only one section of the Union and did not concern the people of more than half the States.

Every one conversant with the development of bureaus and departments at Washington is aware of the fact that in each instance they are the outgrowth of progress in the separate States, and of the wants of large classes of people.

After many States had created agricultural bureaus, boards or commissioners, and after the farmers had become widely interested in the matter, Congress enacted a Bureau of Agriculture. After a while this was exalted into a Department, without a seat in the President's Cabinet council. Very recently it has made the last step in advancement, and its head is a full Cabinet minister. Nearly all the States had systems of public schools before the Bureau of Education was created, which, under the long and successful administration of Commissioner Eaton, passed from infancy to vigorous manhood. This Bureau works in perfect harmony with the State Superintendents of Public Instruc-

tion. It gathers, arranges and collates a vast amount of educational statistics and information not coming under State purview. It represents the vast corps of teachers in the Union at Washington, increases the self-respect of this large body of influential citizens and, as a consequence, grows continually stronger in the public esteem.

There is now at Washington nearly all the provision or machinery of a Health Department worthy this mighty people, which yet does not satisfy the public demand for want of enlargement and coördination. A service nearly a century old, established originally as an act of charity to a heedless class, and supported by a tax upon that class, has, by a singularly interesting process of evolution, expanded into a Bureau with four exceedingly important drawers. The care of the United States Marine Hospitals, once its sole function and the cause of its creation, is now only one of its duties, a great charity though it be, with a chain of splendid buildings perfectly equipped and ably managed. All honor to him who conceived the idea of elevating this service from the low estate into which partisan administration had reduced it. All honor to those who have changed it from sinecure posts for party reward to scientific positions for genuine merit.

Last year, in pursuance with an earnest request from the American Medical Association, Congress greatly enlarged the ability of this Service to take charge of maritime quarantine, so that now this, one of the chief functions of a National Health Bureau, is by common consent placed in its hands, with funds and powers amply sufficient for most efficient work. Surely this addendum far outweighs in importance and esteem its moderate hospital work.

Curiously enough, last year also a threatened epidemic of yellow fever brought a demand upon the central Government for assistance which could not be refused, inasmuch as a contingent fund for just such purposes had been placed to the order of the President, who could find no other channel through which to extend relief than this same old seaman's friend. Thus inter-State quarantine and aid fell under its wing. And though this may be a temporary work, yet when occasion does occur for its performance, in magnitude and importance it dwarfs even maritime quarantine. A fourth drawer in this nondescript Bureau is the direction of investigations throwing light upon the causes and prevention of diseases, which has been committed to its charge in more than one instance by Act of Congress during the few years just passed.

Thus it would seem that the United States Marine Hospital Service has altogether outgrown its name. It should be styled the United States Public Health Service, while retaining essentially its present organization. Maritime quarantine, inter-State quarantine and aid, and scientific researches, with its original work should constitute

four separate sub-departments with ample funds and full clerical force. The head of the whole should be, as now, a Supervising Surgeon-General. This is better than a Bureau with a political appointee at its head. The term Service is significant and it is popular.

The U. S. Signal Service, Life Saving Service, Light Service, are doing much to render the Government revered as a benefactor instead of being regarded as a harsh tax-gatherer. The small sum expended upon lights along both banks of the Mississippi River has done more to lighten toil, mitigate danger and save loss of life and property, than immense sums expended in other channels.

The United States Public Health Service thus established, by a process not of revolution but evolution, can be most efficiently aided in its wide field of action by three existing agencies at Washington, each of which has been long in operation with universal favor and popular support.

First. The United States Signal Service. Climatology is of late admitted by all to be a most important branch in the study of preventive medicine. It will not be long before weather warnings will be more in request for health purposes than even now for commercial and agricultural reasons. One or two clerks in the Public Health Service can obtain and coördinate all the weather knowledge it may need as effectually as if the two Services were combined in one.

Second. The United States Census Bureau of Vital Statistics. Every ten years the Government, in connection with the enumeration of the people required by our polity of representation, sets to work a Supervisor of Mortality and Vital Statistics for that special census. This office should be permanent and the work continuous. All admit the supreme importance of accurate vital statistics as the very basis of practical sanitation. The experience of over a century shows that the States and Territories will not efficiently provide these statistics. A few large and wealthy States may, but, judging the future from the past, the youngest grandchild of our great-grandchildren will not live to see America on a par with Great Britain in this, the very basis of a high civilization. This work is eminently within the province of the Federal Government, and will find with the people a welcome not less warm than that extended to the postal or weather services.

Third. The United States Coast and Geodetic Survey. A minute topographical survey is an essential in sanitary work. Great Britain, France, and even Spain, a country which we ignorantly much underrate, have either perfected or are perfecting topographical maps on a scale of several inches to the mile. These maps are perfect delineations of the country. In America there is not a single State thus mapped, and perhaps never will be. It is a costly work, requiring time and

highest scientific skill. This, too, is eminently an undertaking for the Federal Government, of absolute necessity from a military standpoint no less than for public health reasons.

That a complete Weather Service in each State under the control and support of the United States; that the permanent collection, collation and publication of the vital and mortuary statistics of each State under the same authority; and that a minute topographical survey of each square mile in the three and a half millions over which floats our flag, is also its legitimate work, follows logically from the fact that each and all of these great factors in the people's progress to a civilization higher than any which has yet been attained by humanity, are eminently National in their character and relations; and also from the further fact that their cost is far beyond the means at the disposal of the States. Be it always remembered that the States have surrendered to the Federal Government the two lucrative sources of revenue, customs and excise duties, and thus left themselves poor.

Above is briefly sketched the outline of a plan which, without jostling or jarring, but simply by expansion and coördination, will give what the American Medical Association has so often and earnestly demanded—a Public Health Service worthy our Continental Republic, which, though but a century old, already rivals in influence, fame and future hopes the mighty Republic of antiquity whose name is even now a synonym for dominion.

ORIGINAL ARTICLES.

NOTE ON SOME GYNECIC USES OF BORIC ACID.

Read in the Section on Obstetrics and Gynecology, at the Fortieth Annual Meeting of the American Medical Association, June 25, 1889.

BY WILLIAM WARREN POTTER, M.D.,
OF BUFFALO, N. Y.

It is simply proposed at this time to record some personal experiences with boric acid in gynecological work. This will necessitate a tolerably free employment of the personal pronoun, for which I trust your pardon will be readily granted.

I was first led to the use of this agent in the manner detailed, in casting about for a substitute for iodoform. After using the latter drug twelve years, surgically and gynecologically, in sundry and divers ways, I was compelled to abandon it by reason of a poisonous effect it produced on my hands. This was a sore grievance, for it seemed at the time as if it meant the relinquishment of my work to a considerable extent. Whenever I suspended the use of iodoform my hands recovered, but every time I took it up again a derma-

titis was set up, and exfoliation of the cuticle followed.

In boxing the compass for a substitute that should stand completely in its stead, no little difficulty was experienced, for I must needs have one that would answer both aseptic and antiseptic indications. To be sure, I knew something about boric acid and some of its various uses in medicine and surgery, but it did not readily occur to me to make such use of it as I had previously done of iodoform—not, indeed, until I had tried several other drugs that, one and all, only served me indifferently well.

In the treatment of the various uterine and ovarian displacements it had been my custom in many instances, for some years, to pack the vagina in one way and another with cotton, wool, and other materials, first dusting the vaginal surfaces with iodoform in the dry treatment, or saturating the first two or three pledgets in glycerole or iodoform if the moist packing was employed. Experience had taught me that in this way I could make the packing last much longer without decomposition of the uterine and vaginal discharges—a desideratum of no inconsiderable importance. But without iodoform I found the time in which decomposition would take place considerably lessened.

While passing through this period of trial, experiment, and disappointment—speaking with reference to the various drugs I had been substituting for iodoform—a lady came to me one day with a history of dysmenorrhœa, from which she had suffered since girlhood. She had now been married several years without issue, and the pain during menstruation was steadily increasing. I found a long, narrow, and bent cervix, with erosions surrounding the os uteri, and a catarrhal exudate oozing therefrom.

This appeared to me a good case for rapid dilatation, and I so stated to the patient, giving my reasons for the opinion. She was a woman of culture and intelligence, and readily assented to the proposed future operation, I agreeing that it should be done after the next menstruation. Meanwhile, I proposed to cure the erosions and vaginal irritation that the acrid discharges were causing. Having some boric acid at hand that I had obtained for another purpose, it occurred to me to dust the os and upper vagina well with it, and to pack some dry cotton around the cervix to retain the boric acid in contact with the eroded surfaces, and particularly to keep the vaginal walls asunder.

Three days afterward I removed the packing, when, to my delight, the erosions were found changed to a more natural color, while the cotton was as sweet and inodorous as the day it was placed. This treatment was repeated at regular intervals, though more efficiently than at first, until the erosions were cured; but, alas! the

menses did not appear at the next expected period. The woman proved to be pregnant, and I was thus deprived of the opportunity of making a lucrative, and I trust successful, operation for the cure of her dysmenorrhœa and sterility. However, nature has done her work well, the dysmenorrhœa is cured, a young family is growing up with rapid increase, and I have no right to complain.

While treating this patient I had other opportunities of using this medicine daily, and I have continued it, for one reason and another, ever since.

The lessons this case taught me were:

1. That boric acid was an antiseptic of no mean value for intra-vaginal uses.

2. That it was chemically adapted to neutralize the acidity of the uterine and vaginal discharges, and thus contribute to the cure of sterility due to such causes. I have since had opportunities to verify this observation.

In the treatment of uterine and ovarian displacements, as I have before remarked, and in dealing with pelvic inflammations or their residues, it has been my custom for some years, in suitable cases, to employ vaginal tamponnement, either as a preparatory measure to other and more radical management, or as a curative agent, as the case might indicate or demand. I have described my method of packing the vagina for such purposes in considerable detail, not only in papers read in this Section but before other societies as well, and I only refer to it here and again in order to elucidate one or two points relating to it, for this paper may be regarded as in a measure supplementary to the others.

When I first began the systematic employment of vaginal tamponnement for the various conditions to which it is adapted, it was not expedient for the patients to retain the packing longer than twenty-four to thirty-six hours. This was partly because the work was done with less mechanical perfection, and hence the tampon would sag or become partially dislodged; but more especially because the secretions and exudates, natural and unnatural, would decompose and give off putrescent odors if left much longer.

Now, after twelve years or more, there has been much improvement in this simple but important mode of treatment. Then glycerine, carbolic acid, iodine, chloral, and perhaps a few other agents were employed to render the packing aseptic, and to promote shrinkage, absorption and osmosis. When iodoform came into vogue for this work it served a much better purpose, for it prevented decomposition for a longer time, was less irritating to the mucous membrane and, besides, possessed some inherent advantages as a curative agent.

But it is not my purpose now to chronicle the evolution of vaginal tamponnement for pelvic disease, from the primitive cotton-glycerine ball

of the earlier days, to the multiple wool tampon of the present. My object is more especially to invite attention to the fact that boric acid is a valuable drug to use in connection with this sort of treatment; and that, whereas under the old plan the tampon could not be permitted to remain longer than two or three days at the utmost, now I have no difficulty in packing the vagina so it will stay for a week, and that without emitting the slightest putrescent odor upon removal. This is of great moment, especially to patients who must needs come from a distance, and to those again who cannot afford more frequent visits to their doctor. Furthermore, I believe it better in many cases that this treatment be not repeated oftener than once a week. It is less disturbing to many women, psychically speaking, to have infrequent manipulations of the genital tract, no matter how delicately done; and, again, it is even better in many other cases not to disturb a well placed and efficient packing too often. We insure good pelvic rest, the elastic pressure is well maintained, the tampon keeps sweet. These, and many other reasons that I need not take time now to mention, all conspire to make it expedient—nay, even wise—to repeat the treatment as infrequently as possible or consistent with the welfare of the woman. Not all patients can wear the packing equally long; indeed, some should not be allowed to go a full week before its renewal, while others may carry it a little longer; but a week may be given as a fair average.

The method I adopt may be briefly and concisely described as follows:

First. Place the patient on her back and administer a copious hot vaginal lavement.

Second. Direct her to assume the knee-chest posture, introduce a Sims speculum or other retractor, wipe the vagina dry with absorbent cotton, dust the whole surface well with boric acid by means of a powder blower.

Third. Place two or three pledgets of cotton around the cervix, then turn into the vagina such a quantity of boric acid as may be desired—say a tablespoonful—and finally pack it neatly and quickly, even firmly, with wool pledgets, distributing the pressure where most needed.

At the end of a week—sometimes more, sometimes less—this packing is removed by the threads attached to each pledget, when the operation may be repeated.

This tamponnement of the vagina should always be preceded by the hot douche to insure a foundation of cleanliness, for which latter it is quite as important as it is for the effect it has on the circulation of the pelvic vessels.

The knee-chest posture affords the best opportunity, as a rule, to bring the boric acid in contact with every nook and cranny of the vagina, and enables the operator to pack the cavity snugly with less discomfort to the patient; yet, in some

cases where this posture is inexpedient, the Sims position may be substituted.

The method of doing the packing—its technique—is of considerable importance; for, if it be carelessly or indifferently done, its potency is greatly diminished. A little practice will readily suggest to the operator the proper course to pursue as to the amount of pressure, quantity of boric acid, and other details of the treatment. The principal feature to be borne in mind is that the tampon must not be uncomfortable by reason of its size, while at the same time it must be sufficiently ample in volume to be retained well in place.

Another way in which I have used boric acid with satisfaction must not be forgotten. After plastic operations in the genital tract I pour a quantity of it into the vagina, and then carry a rope of boric cotton up to the os uteri, allowing it to hang out over the perineum 2 or 3 inches. This may remain three or four days, and will protect the parts in various ways. The line of sutures—cervical, intravaginal or perineal—will be guarded antiseptically with a suitable dressing, that I cannot but regard as beneficial in promoting immediate union. I formerly used iodoform gauze in a similar way, but I like this plan much better.

There are many other gynecic uses of this drug that could be referred to, but I fear that I have already gone beyond the limits of a "Note."

The points upon which I wish to place emphasis are:

1. That boric acid is suited to many gynecic uses where antiseptics are required.
2. That it can claim superiority for vaginal tamponnement by reason of (a) odorless, (b) colorless, (c) non-irritant, chemical properties; these admitting of its frequent, liberal, and prolonged employment where this method of treatment is indicated.
3. That it is a remedy of value in sterility due to acrid secretions that destroy the fecundating power of the spermatozoa.
4. That it is one of the best powders to render operation wounds in the genital tract aseptic.

If I have given to even one person in this assemblage a single hint that may hereafter prove an aid to him, the object of this note will be served.

284 Franklin St.

AN INTRODUCTION TO THE STUDY OF PNEUMONIC FEVER.

BY EDWARD F. WELLS, M.D.

EIGHTH PAPER.

CAUSATION: PREDISPOSING INFLUENCES.

There is much which we know of the causation of pneumonic fever; but there is vastly more of which we are, as yet ignorant. With the

lapse of time and the progress of knowledge we may confidently expect that the veil will be lifted and the Egyptian darkness dispelled. In no corner of the etiological field is there so much room for doubt and error as in the study of the predisposing¹ causes of diseases, and this is especially true of pneumonic fever.

This malady has been so often observed to occur during, or to follow upon some peculiar state of the general system, an injury or a disease, with such regularity and frequency as to lead to the inference that they exercise a predisposing influence over the production of the pneumonic fever. The explanation of the fact, however, is often, nay generally, not at hand. Yet even under these circumstances we should never lose sight of the fact that "every occurrence in nature is the result of some previous occurrence which we have agreed to call its cause, and which, in turn determines some other, which we consider its effect. Nothing is accomplished at any time by a sudden act of transition,"² or by chance.

A vigorous and robust constitution, joined, as it usually is, with active habits and a sanguine temperament, is thought by many³ to predispose to the disease, whilst others⁴ hold opposite views. It is probable, however, that one of the principal reasons why the strong and healthy are so frequently attacked is that they are usually more exposed to the deleterious influence of cold and wet, overexertion and worry and other predisposing causes of the disease.⁵

Of 171 cases analyzed by Chomel, 87 were strong, 36 average and 13 weak. Of Bouillaud's 26 cases, 20 were strong and 6 weak. Of Bennett's 118 cases, 49 were in bad health when attacked. Of 750 cases tabulated by Patton only 18 per cent. were previously healthy. Of my 498 cases 134 were strong, 267 average and 97 weak.

Some persons, without any obvious reason, are peculiarly predisposed to, or exempt from, attacks of pneumonic fever, and this proclivity or immunity may extend to entire families, tribes or races.⁶ In some instances immunity, for example, is clearly due to exceptionally favorable hygienic,⁷ climatic or other external influences; or to certain states of the system, such as pregnancy⁸ or

chlorosis,⁹ in females, or advanced emphysema,¹⁰ etc.

The inhalation of various noxious gases, fluids and solids may act as a predisposing cause of the disease. The lungs act as a filter and retain much of the irritating substances which find access to them,¹¹ and these may light up a local inflammatory process¹² which serves as a nidus for the development of the pneumonic poison, or render the system less able to resist its onslaughts.

Of such substances we may mention gasses arising from the combustion of anthracite and other coal,¹³ natural gas,¹⁴ sewer-gas,¹⁵ smoke, steam and heat, the fumes of acids¹⁶ and bromine,¹⁷ vapor of chloroform and other anæsthetics,¹⁸ cinders, pollen, dust from hemp works, flouring and planing mills, cotton gins and cotton mills,¹⁹ seed and grain threshing machines,²⁰ needle, edged-tool and gun-barrel grinding, button and nail²¹ making, mining,²² quarrying²³ and various other foreign matters.²⁴

⁹ Fox, op. cit., p. 157; Huss, op. cit., S. 9.

¹⁰ Rokitsansky, Path. Anat., Phila., 1856, Vol. iv, p. 56.

¹¹ Tyndall, Floating Matter in the Air, London, 1881.

¹² Lehmann, Expmt. Studien., München, 1886.

¹³ Crawford, Diseases Wyoming Valley, Wilkesbarre, 1881.

¹⁴ Corfield—N. Y. Med. Rec., June, 1886, p. 665—doubts whether this acts as a cause.

¹⁵ Corfield, London Lancet, 1884, Vol. i, p. 472; Bell, N. Y. Med. Rec., Nov. 12, 1887, p. 663; Loomis, Pepper's Syst. Med., Vol. iii, p. 317.

¹⁶ Dyson, London Lancet, 1884, Vol. i, p. 65.

¹⁷ Bruntton, Pharmacol., etc., Phila., 1885, p. 469.

¹⁸ Gerster, N. Y. Med. Rec., April 23, 1887, p. 453; Wyeth, Ibid., p. 474; et al. Gerster has given a series of very interesting cases in which pneumonic fever followed the employment of anæsthetics.

A female, aged 43, submitted to lumbar colotomy, under ether. On the following morning a severe chill ensued, followed by the ordinary symptoms of pneumonic fever and death on the fourth day. The entire right lung was solidified.

A man, aged 60, was castrated, under ether, and was attacked with pneumonic fever two days later. The temperature rose to 106° F. and death speedily ensued.

A man, aged 61, underwent inguinal colotomy, under ether, and on the next day was attacked by pneumonic fever, locally affecting the entire right lung.

A man, aged 25, who had recently had pneumonic fever, took ether for the extirpation of the inguinal glands. The affection re-appeared in the same lung and proved fatal.

A woman, aged 50, was operated upon, under ether, for ruptured perineum. Pneumonic fever developed immediately and terminated fatally.

A boy, aged 16, had the inguinal glands removed, under ether. Severe pneumonic fever ensued. Recovery.

It may be that the pneumonic inflammation is due less to the effects of the anæsthetic than to the exposure and chilling of the patient by the extensive uncovering and wetting of parts usually clothed. See Wier, N. Y. Med. Rec., April 23, 1887, p. 473; Abbe, Ibid., p. 474. For further information as to the effects of anæsthetics on the lungs see Brit. Med. Jour., Dec. 18, 1886.

²⁰ Moen, Rpt. Health Officer, Oldham, 1886.

²¹ I have met with an interesting series of cases of pneumonic fever following exposure to the dust of clover-hulling machines. Of these the following are examples: A farmer, aged 42, engaged in threshing clover, was attacked with pneumonic fever, locally affecting the entire left lung. Three days later the base of the right lung also became involved. Recovery was long delayed by a small abscess in the right lung, which only began to improve after the expectoration of a thick mass of pus in which were imbedded some small, dark objects, supposed to be pieces of clover-hull. A young man, engaged in like occupation, developed pneumonic fever, the local processes pursuing a lingering course; improvement following closely upon the expectoration of a small piece of clover-hull. Another gentleman, of middle age, likewise engaged, was attacked with pneumonic fever, with diffused local consolidations, which also pursued a lingering course.

²² Reeve, Jour. Am. Med. Ass'n, 1885.

²³ Hirt, Die Staubinhalationskrankh., Breslau, 1871; Moll, Berliner Diss., 1869; Osterlen, Med. Statistik., S. 375.

²⁴ Greenhow, Trans. Path. Soc., Vol. xviii.

²⁵ Zenker, Deutsche Arch. f. klin. Med., Bd. ii; Fox, op. cit., p. 158; Peacock, Brit. and For. Med.-Chir. Rev., Vol. xxv; Holland, Edinb. Med. and Surg. Jour., 1843; Grisolle, op. cit., p. 146; Diunstl, Österr. Zeitschr. f. Prak. Heilk., 1862; Bretonneau, Rech. Inflamm. Spec. Tiss. Muqueux, Paris, 1826, p. 100; Reitz, Sitz. k. k. Akad. zu Wien, 1867; Wyeth, op. cit., p. 474; Virchow's Arch., Bd.

¹ Predisposition is that which prepares the system for the reception and entertainment of the exciting cause.

² Oliver, N. Y. Med. Record, Aug. 27, 1887, p. 243.

³ Bouillaud, Dic. de Méd.: Chomel, Pneumonie, S. 318; Copland, Med. Dic., Vol. i, p. 647; Cullen, Prac. Phys., Phila., 1792, Vol. i, p. 181; Fox, Reynolds' Syst. Med., Phila., 1880, Vol. ii, p. 156; Grisolle, Traité de la Pneumonie; Hippocrates' Works, Adams' Ed.; Huss, Lungenentzündung, 1862, S. 9; Sturges, Nat. Hist. Pneumonia, London, 1876, p. 168; Ziemssen, Pleuritis u. Pneumonie, Berlin, 1862, S. 153; et al.

⁴ Bennett, Restorative Treat. Pneumonia, 1866, p. 24; Juergensen, Berliner Klin. Wochenschr., 1884, Nr. 17, S. 271; Patten, Jour. Am. Med. Ass., Oct. 16, 1886, p. 425; Green, Pathology, p. 364.

⁵ In this connection it should be remembered that exposure which was yesterday borne with impunity may imperil life to-morrow, as is often illustrated in practice.

⁶ See Pfeiffer, Berliner Klin. Wochenschr., 1883, S. 108; Baginsky, Pneumonie, Tüb., 1880, S. 82; Krieger, Disposition zu Katarrh, etc., Strassb., 1880.

⁷ Fox, op. cit., p. 157.

⁸ Juergensen, Ziemssen's Handb., Bd. v. S. 28; Pause, Lungenentzündung, 1861, S. 64.

It has been doubted, and even denied, that suspended solid matters could reach the alveoli, but the observations of many writers disprove the assertion.²⁵

A curious case of pneumonic fever came under my notice several years ago: A male epileptic imbecile, æt. 22, shortly after eating, was taken with a fit, falling to the ground with his face in a shallow depression. Whilst in this position he vomited freely and some of the ejecta found their way into the lungs. The inflammation was confined to the apex of the left lung, pursued an ordinary course and terminated in recovery.

Filling of the bronchi with water, as in submersion, is not infrequently followed by pneumonic fever.

The foreign matters may be of a septic nature and cause pulmonary inflammation of a peculiar character, besides infecting the system generally. This is what occurs when the poisonous dust arising from fleeces of wool infected with anthrax is inhaled.²⁶

The foreign material may be a body of considerable size, and may remain for a long time in the lungs without causing disease, but so long as it or its effects remain it is an element of danger.

Hargrove²⁷ relates the following case: In the autumn of 1866 a cockle-burr was lodged in the right bronchus of a healthy woman of 18. After subsidence of the first violent symptoms no serious inconvenience was encountered until February, 1869, when acute pneumonic inflammation developed in the right lung. A second attack ensued in June and the final one in July. At the autopsy both lungs were found inflamed, with an abscess on the surface of the right one. The burr was in a perfect state of preservation.²⁸

The secretions of the respiratory tract, especially bronchial, when aspirated into the finer tubes and alveoli act as foreign bodies, and, when not promptly expelled, may pave the way for pneumonic inflammation. Collapse of lobules may

produce the same effects. The solid and semi-solid secretions sometimes formed in the nares, tonsils, pharynx, larynx, etc., may also cause like results should they become dislodged and find their way into the peripheral areas of the respiratory tract.

Blood, pus and acrid, putrid or other secretions from wounds or diseases of the respiratory tract may pass into the finer bronchial tubes and be followed by pneumonic fever.

This may occur in cancrum oris,²⁹ scurvy and other ulcerative diseases of the mouth,³⁰ cancer of the tongue, pharynx or larynx and the operations for its relief,³¹ diphtheria, tracheotomy and laryngeal intubation,³² calculus of the bronchi,³³ chronic bronchitis,³⁴ hæmoptysis,³⁵ etc.

Disease and injury of the central nervous system are very frequently followed by pneumonic fever.

Calmiel,³⁶ in an analysis of 188 cases of organic disease of the brain found acute inflammation of the lungs present in nearly one-third of them.

A girl, æt. 5, received an injury of the head by being run over by a carriage. Two or three days afterwards feverish symptoms set in, with stupor, stertorous breathing, tremulous pulse, involuntary discharge of feces, convulsions and, finally, death. At the autopsy no gross lesion was found within the cranium, but the right lung was found violently inflamed and consolidated.³⁷

A man, æt. 26, received a pistol-shot wound of the head, from which he had partially recovered, when, after exertion, pneumonic fever developed and terminated fatally in ten days. At the autopsy the ball was found, partially encysted and partially imbedded in the jugular fossa. The pulmonary vessels were everywhere dilated, with

²⁵Baudelocque, quoted by Chomel, *Pneumonie*, S. 334; Grisolle, *op. cit.*; Fox, *op. cit.*, p. 161.

²⁶Hermanu, *Lungenentzündung*, S. 22; Murray, *Lond. Lancet*, N. Y. 1882, Vol. ii, p. 429; Chomel, *op. cit.*, S. 239; Fox, *op. cit.*, p. 161.

²⁷Gould, *Lancet*, N. Y., 1881, Vol. i, p. 415; Albert, *Wiener Med. Presse*, Oct. 30, 1881, S. 1373; McLeod, *Lancet*, 1878, Vol. i, p. 750; Curling and Wordsworth, *Lancet*, N. Y., 1860, Vol. i, p. 404; Stokes and Baker, *Ibid*, 1881, Vol. ii, pp. 59-60; Spanton, *Ibid*, p. 144; Page, *Ibid*, p. 432; McKenzie, *Illness of Frederick the Noble*, London, 1888; Scheier, *Deutsche Med. Wochenschr.*, June 7, 1888; Semon and Shattuck, *N. Y. Med. Record*, April 28, 1888, p. 480; Mudd, *St. Louis Med. Rev.*, Nov. 10, 1888.

²⁸Gross, *Phila. Clin. News*, April 9, 1881, p. 202; Spencer, *Lond. Lancet*, N. Y., 1883, Vol. i, p. 463; Evans, *Lond. Lancet*, N. Y., 1859, Vol. ii, p. 44; Jacobi, *Diphtheria*, N. Y., 1880, p. 226; Treves, *Lancet*, 1884, Vol. i, p. 299; Gerster, *Jour. Am. Med. Ass'n*, May 22, 1886, p. 585; Bouchet, *Paris Méd.*, 1884; Wier, *Cincinnati Lancet and Clinic*, Dec. 22, 1883, p. 555; Anderson, *Lancet*, N. Y., 1861, Vol. i, p. 148; Langenbusch, *Jour. Am. Med. Ass'n*, March 22, 1884, p. 320; Brown, *N. Y. Med. Rec.*, June 25 and July 23, 1887; Waxham, *Jour. Am. Med. Ass'n*, Oct. 24, 1885, p. 469; Ripley, *N. Y. Med. Jour.*, Feb. 14, 1885, p. 201; Mudd, *Jour. Am. Med. Ass'n*, June 25, 1887, p. 703; VanSantvoord, *N. Y. Med. Rec.*, Jan. 24, 1885, p. 107; Brothers, *N. Y. Med. Rec.*, Dec. 11, 1886, and June 18, 1887; Hoadley, *Jour. Am. Med. Ass'n*, Mar. 26, 1887, p. 338; O'Dwyer, *N. Y. Med. Rec.*, June 18 and Oct. 29, 1887; Steiner, *Ziemssen's Handb.*; Caillé, *N. Y. Med. Rec.*, June 18, 1887, p. 687; Peter, *Gaz. Hebdom.*, 1863, p. 689; Northup, *N. Y. Med. Rec.*, Dec. 11, 1886, and June 18, 1887; Huer, *N. Y. Med. Rec.*, June 18, 1887, p. 684.

²⁹Montane, *N. Y. Med. Rec.*, July 30, 1887, p. 146.

³⁰Fox, *op. cit.*, p. 250; Rokitsansky, *Path. Anat.*, Vol. iii, p. 50; Legendre, *Mal. Enfants*, p. 223; Stokes, *Dis. Chest*, p. 159; Stewart, *Dilatation Bronchi*, 1867; Biermer, *Virchow's Handb.*; Laennec, *op. cit.*

³¹Drysdale, *Med. Press*, Jan. 21, 1885; Cleveland, *Cincinnati Clinic*, Sept. 1, 1877, p. 948; Fox, *op. cit.*, p. 158.

³²Dict. de Méd., T. ii, p. 196, et *Mal du Cerveau*, Paris, 1859.

³³Klein, *Chir. Bemerkungen*, Stuttgart, 1801, S. 41.

lxxxii; Heszay, *Ungar. Zeitschr.*, Bd. ii, 1859, S. 33; Wilson, *Med. Times and Gaz.*, Oct. 17, 1864, p. 384; Robers, *Phth. Carbon.*, Paris, 1862; Freiderich, *Virchow's Arch.*, Bd. xxx, S. 394; Merkel, *Arch. f. klin. Med.*, Bd. viii, S. 206; Sanders, *Schmidt's Jahrb.*, Bd. cxvix, 1864, S. 149; Beauprand, *Canstatt's Jahresb.*, 1865; Rindfleisch, *Path. Gewebe.*, Leipzig, 1871, S. 375; Fuchs, *Henker's Zeitschr.*, 1837, S. 12; Vleminkx, *Bull.*, etc., 1869, T. iii, p. 1249; François, *Bull. de l'Acad. Belge*, 1857; Lewin, *Inhalation Therap.*, Berlin, 1865, S. 24; Crocq, *Schmidt's Jahrb.*, Bd. cxvix, 1865, S. 98; Beddoes, *Pulmon. Consump.*, London, 1801; Kuboru, *Mal. aux ouvriers Mineurs*, Paris, 1863; Morten, *Vierteljahrschr. f. Ger. Med.*, Oct., 1860; Brockmann, *Die Metal. Krankh.*, etc., 1851; Peroud, *Charb. du Pommou*, 1862; Markettor, *Black Phthisis*, Edinb., 1846; Cox, *Jour. Pub. Health*, March, 1857.

²⁵Peacock, *Lancet*, N. Y., 1861, Vol. i, p. 56; Greenhow, *Lancet*, N. Y., 1863, Vol. i, p. 306; Lakeman, *Lancet*, 1884, Vol. ii, p. 255; Villaret, *Anthraxis*, etc., Paris, 1862; Maggiorani, *Sull'ing della sub. pulv. nella via della Resp.*, 1858; Reimbault, *Hyg. des ouvriers Mineurs*, Paris, 1861; Marshall, *Lancet*, 1823; Schofield, *Employés aux Mines de Charbon*, Charleroi, 1843; Barthelness, *Lungen Melanosis*, Erlangen, 1855; Fossion, *Bull. de l'Acad. de Belge*, 1859; Kipper, *Rhein u. Westphal. Corresp. Bl.*, 1845, Nr. 17-22; Tardien, *Hyg. de Moulure*, etc., Paris, 1855; Boens, *Mal. des Houillères*, 1862; Vernols, *Ann. d'Hyg.*, 1858.

²⁶See Greenfield, *Lond. Lancet*, N. Y., 1881, Vol. i, p. 481; Bond, *Lond. Lancet*, 1887, Vol. ii, p. 511.

²⁷Am. Practitioner, March, 1870, p. 188.

²⁸For other cases and information consult LeCount, *Jour. Am. Med. Ass'n*, Sept. 17, 1887p. 371; Kiusman, *Cincinnati Clinic*, Mar. 7, 1874, p. 113; McCormack, *Lond. Lancet*, N. Y., 1852, Vol. i, p. 299; Wells, *Jour. Am. Med. Ass'n*, Dec. 19, 1885, p. 675; et. al.

a reticulated exudation in the alveoli and thickening of the pleura.³⁸

That pneumonic fever often prevails in connection with cerebro-spinal fever has long been a matter of common observation.³⁹

In these cases the pneumonic inflammation is due either to pulmonary extravasation,⁴⁰ local vasomotor paralysis, paralysis of the vagus⁴¹ or paresis of the respiratory muscles.⁴² Paralysis of the soft palate and pharynx may be followed by the disease.⁴³

When the vagus is implicated irritative matters pass readily into the lungs, from whence they, together with the mucus secretions, cannot be again dislodged. Inflammation is the result.

A boy, æt. 12, suffered a mild attack of diphtheria and apparently recovered in due season. After the lapse of three weeks there supervened a gradually increasing paralysis of the palate to such an extent that swallowing liquids was a very difficult procedure—being invariably accompanied by regurgitation through the nares, and often by coughing and choking. Ten days later pneumonic fever was developed, ending in recovery. The faucial paralysis gradually improved, but was still present to a slight extent eight years afterwards.

It has been believed that insanity predisposes to pneumonic fever,⁴⁴ but after an attentive study of a great number of asylum reports I cannot confirm the supposition. The influences of the passions, hope, fear, anger etc., in this direction are not fully known.⁴⁵

Otitis media is not infrequently complicated by pneumonic fever.⁴⁶

In 1880, I saw in consultation a child, æt. 3, that had been ill for three weeks with otitis media purulenta with perforation of the drum membrane. Two days previously the discharge had ceased, followed by fever, delirium, incessant vomiting, cough and the evidences of inflammation at the bases of both lungs. Icterus and effusion into the left pleural sac ensued and he died a week later.

A female child, 1 year old, was restless for a day, awoke from sleep with fever, retraction of the head, a nasal discharge, a stifled cough and a piercing cry, followed by moaning. Four days later there were presented the evidences of pneumonic consolidation at the base of both lungs and distention of the tympanic cavity. The drum membrane was punctured and exit given to a small amount of purulency. The discharge became free after a few hours, and the pulmonary symptoms rapidly subsided.

A young lady, æt. 22, experienced for a few days the ordinary symptoms of a "cold in the head," notwithstanding which she exposed herself for several hours to intense cold. This was followed by intense pain in both ears, fever, epistaxis, delirium, dry tongue, sordes, total deafness, cough and rusty expectoration. Examination on the fifth day revealed hepatization of the base of the left lung. The right ear was discharging and the left drum membrane was punctured. Recovery, including hearing ensued.⁴⁷

Injuries of the chest may be followed by pneumonic fever,⁴⁸ although it is not a necessary consequence.⁴⁹

A boy, æt. 15, engaged in a scuffle, was sprung upon by his antagonist, who knocked him down and knelt upon his breast. Pain at the injured spot was at once complained of, although there was no outward injury to be seen. Illness came on, with fever and the symptoms of pulmonary inflammation. Death occurred after ten days and the autopsy revealed consolidation of the lung beneath the seat of injury.⁵⁰

A simple, uncomplicated, fracture of the ribs, although seldom followed by pneumonic inflammation in the young, may be so in the aged subject of chronic bronchitis. Under these circumstances a fracture of the first rib or clavicle is of

³⁸ Fisher, N. Y. Med. Jour., Aug. 25, 1883, p. 222.

³⁹ Jaffe, Med. Chir. Rundschau, April, 1882, S. 242; Smith, Am. Jour. Med. Sci., Oct., 1873, p. 314; Wilson, Fevers, N. Y., 1881, p. 87; Warren, Spotted Fever; Gallup, Epidemics of Vt., 1816; Levick, N. Y. Med. Rec., July 9, 1887, p. 42; Bartholow, Prac. Med., N. Y., 1880; Clark, N. Y. Med. Rec., June 15, 1872; Carpenter, N. Y. Med. Rec., July 16, 1887, p. 85, et al. Wood—N. Y. Med. Rec., May 14, 1887, p. 557; Robinson, Ibid., p. 558, and others—have not been able to observe any relation between the two diseases.

⁴⁰ Brown-Sequard, in experimenting on animals, found that if an injury of the head was survived for a time that pneumonic inflammation frequently ensued. After such injuries emphysema and numerous minute extravasations were found in the lung on the side opposite the cerebral injury. See London Lancet, Jan. 7, 1871.

These observations are confirmed by those of Fleischmann—Centralbl. f. d. Med. Wissensch., 1871, Nr. 28—on men, and a case reported in the U. S. Marine-Hosp. Rpts., 1883, p. 262.

⁴¹ Traube, Expt. Path., 1846; Simon, Holmes' Syst. Surgery, Phila., 1881, Vol. i, p. 89; Gärtner and Amrus, Lond. Lancet, Mar. 7, 1885; Wilks, Ass'n Med. Jour., Feb. 17, 1884, p. 145; Frey, Arch. f. Phys., Bd. xiv, 1877; Lagout, L'Union Méd., Oct. 19, 1878; Macewen, Phila. Med. News, Aug. 18, 1888, p. 173; Rohden, Deutsche Med. Wochenschr., June, 1877; Bartholow, Med. Electricity, and op. cit.; Fernet, La France Méd., 1878; Rosenbach, Berliner Klin. Wochenschr., Oct. 14, 1878; Osler, Canada Med. and Surg. Jour., July, 1887; Broadbent, Brit. Med. Jour., March, 1887; Gaskel, Jour. Phys., Vol. v-vii; Jessop, Dobell's Rpts., 1876, p. 48; Warner, Brit. Med. Jour., 1887; Mills, Jour. Anat. and Phys. Weit, Vols. xx-xxi; Thèse de Paris, 1882; Bettleheim, in Lépine's Pneumonie, Wien, 1883, S. 115; Hewan, Med. Times and Gaz., March, 1875; Niemeyer, Handb. d. Spec. Path. u. Therap., Berlin, 1862; Bianchi, Rivista Clin., Feb., 1888; Lépine, Pneumonie, Wien, 1883, S. 29; Fabre, Gaz. des Hôp., 1878, p. 1171; et al.

⁴² Erichsen—Concussion of the Spine, N. Y., 1883, p. 46—has shown that certain injuries or diseases of the spinal cord may be followed by paresis of the muscles of respiration to such an extent as to prevent the expulsion of the bronchial secretions. Results similar to those following paralysis of the vagus ensue. See also Richardson, London Lancet, 1887, Vol. ii, p. 1221.

⁴³ Lancet, N. Y., 1883, Vol. ii, p. 319.

⁴⁴ See Mann, N. Y. Med. Jour., Jan. 3, 1885, p. 24.

⁴⁵ See LaRoche, Pneumonia, p. 427; Doubleday, N. Y. Med. Rec., March 28, 1885, p. 343.

⁴⁶ Gull, Med. Chir. Trans., Vol. xxxviii: Hinton, Holmes' Syst. Surg., Vol. ii, p. 211; Steiner, Kinderkrankheiten.

⁴⁷ For further information see Wells, Cincinnati Lancet and Clinic, June 10, 1882, p. 504; Hillier, Diseases of Children.

⁴⁸ Richardson, Jour. Am. Med. Ass'n, July 24, 1884, p. 47; Swett, Dis. of the Chest, p. 84; Hilton, Med. Times and Gaz., 1867, Vol. i, p. 144; Senn, Jour. Am. Med. Ass'n, Sept. 3, 1887, p. 317; Fox, op. cit., p. 158; Grisolle, op. cit., p. 316; Wunderlich, Handb. d. Spec. Path., Bd. iii, S. 13; Andral, Med. Clin., Obsv. 7; Duchek, Präger Vierteljahrsschr., 1853, S. 37; Litten, Zeitsch. f. k. Med., Bd. v; Thiriar, N. Y. Med. Rec., April 21, 1888, p. 447; Chomiel, Pneumonie, S. 320; Boldt, N. Y. Med. Rec., Aug. 20, 1887, p. 224; LaCount, op. cit., p. 370; Pied, Pneumonie, U. S. Marine-Hospital Rpts., 1883, p. 245; Lancette Française, 1834, p. 185; et al.

⁴⁹ Fraser, Wounds of the Chest, London, 1839; Flint, N. Y. Med. Rec., July 14, 1877.

⁵⁰ Morgagni, De Sed. et. Cur. Morb., Lib. ii, Ep. xx, S. 28.

serious import, inasmuch as they are the starting point—the fulcrum, as it were—of the system of respiratory muscles, and it is upon the integrity of this base of support that their proper function depends.⁵¹ In these cases the respiratory movements and cough are restrained and impeded by pain, and the bronchial secretions flow into the alveoli, causing irritation and inflammation. Not only do such results occur from the injury alone, but in some undoubted instances the surgeon has unconsciously aided in bringing it about by applying bandages so tightly as to still further impede the action of the respiratory muscles.

Hernia of the lung and paracentesis of the thorax⁵² may be followed by pneumonic fever.

Pneumonic fever has frequently followed other injuries⁵³ and operations, *e. g.*, concussion of the lungs,⁵⁴ caries of the spine,⁵⁵ resection of ribs,⁵⁶ resection of joints,⁵⁷ resection of the pylorus,⁵⁸ injuries to nerves,⁵⁹ burns and scalds,⁶⁰ the bites of rabid and other animals,⁶¹ the bites of venomous snakes,⁶² pulmonary apoplexy,⁶³ etc.

It has been supposed,⁶⁴ but most probably erroneously,⁶⁵ that overexertion of the lungs, as in public speaking, singing, playing wind instruments, etc., predisposed to the disease. Excessive bodily exertion, especially when accompanied by anxiety is a factor in its causation.⁶⁶

Pneumonic fever may also follow or accompany various diseases of near or distant organs or structures, *e. g.*, pericarditis,⁶⁷ inflammation of the respiratory tract above the air-cells,⁶⁸ inflammation of the bronchial glands,⁶⁹ abscesses of the thoracic walls,⁷⁰ spleen,⁷¹ liver,⁷² abdomen,⁷³ pelvis,⁷⁴

spine,⁷⁵ neck,⁷⁶ etc., thoracic aneurism,⁷⁷ stricture of the œsophagus,⁷⁸ pleurisy,⁷⁹ chronic heart disease,⁸⁰ obstruction of the bowels,⁸¹ acute myositis,⁸² ulcerative endocarditis,⁸³ pyæmia⁸⁴ and other morbid states of the blood,⁸⁵ chronic cancerous disease,⁸⁶ narcotic poisoning,⁸⁷ acute and chronic alcoholism,⁸⁸ albuminuria and other renal diseases,⁸⁹ including diabetes,⁹⁰ the acute exanthemata,⁹¹ ery-

kem, Jour. Hebdom., T. i, p. 133; Thierfelder, Ziemssen's Handb., Bd. viii, S. 123; Loomis, N. Y. Med. Rec., July 21, 1888, p. 78.

⁷³ Bristowe, London Lancet, N. Y., 1883, Vol. ii, p. 436; Goodhart, *Ibid.*, p. 483.

⁷⁴ Porter, Boston Med. and Surg. Jour., Sept. 8, 1881, p. 229; Tessier, in Chomel's Pneumonie, S. 48; Silbermann, Berliner Klinische Wochenschr., 1884, S. 31; Minot, Boston Med. and Surg. Jour., Sept. 8, 1884, p. 231.

⁷⁵ Sébatiér, Jour. Hebdom., 1829, T. ii, p. 99; Hamilton, Prac. Surg., N. Y., 1872, p. 751; Shaw, Holmes' Syst. Surg., Phila., 1881, Vol. i, p. 312.

⁷⁶ Moore, London Lancet, N. Y., 1864, Vol. ii, p. 580.

⁷⁷ Thompson, N. Y. Med. Rec., March 31, 1888, p. 336; Gull, Guy's Hospit. Rpts., Vol. v; Bristowe, London Lancet, N. Y., 1881, Vol. i, p. 399; Robinson, N. Y. Med. Gaz., Nov. 25, 1882, p. 562.

⁷⁸ Forster, London Lancet, N. Y., 1863, Vol. ii, p. 723; Hoadley, Jour. Am. Med. Ass'n, March 26, 1887, p. 338.

⁷⁹ Peacock, Edinb. Med. and Surg. Jour., 1855, p. 281; Fox, op. cit., p. 252; Biermer, Virchow's Handb., Bd. v, heft i; Chambers, Cincinnati Lancet and Observer, Jan. 1863, p. 50; Heinmann, N. Y. Med. Rec., Jan. 26, 1884, p. 106; and a great many others.

The intimate relations existing between the lung and its serous envelope sufficiently explains why it is that the one is scarcely ever inflamed without involvement of the other. This fact has been recognized by every observer from the most ancient to the present time.

⁸⁰ Andral, Anat. Path., 1832, T. ii, p. 517; Virchow's Arch., Bd. i, S. 460; Stokes, Diseases of the Heart; Hasse, Path. Anat., 1846, p. 219; Walshe, Dis. Heart, Phila., p. 289; Niemeyer, Spec. Path. n. Therap., Bd. i, S. 117; Oppolzer, Krankh. d. Herzens, 1869, S. 109; Latham, Dis. Heart, 1847, p. 320; Aitken, Sci. and Prac. Med.; Fuller, Dis. Lungs, 1862, p. 562; Skoda, Auscult. n. Percuss., Wien, 6 te, Auflage, S. 282; Delafield, Am. Jour. Med. Sci., Jan., 1871, p. 95; Grissolle, op. cit.; Chambers, Med. Chir. Rev., Oct., 1853; and others.

⁸¹ Cameron, Glasgow Med. Jour., 1880, p. 444; Ogle, Lond. Lancet, 1887, Vol. ii, p. 105; Porter, Jour. Am. Med. Ass'n, July 28, 1888, p. 123; Lücke, Centralbl. f. Chir., 1888, Nr. 1.

⁸² Jackson, Jour. Am. Med. Ass'n, Jan. 11, 1887, p. 663.

⁸³ Jaccoud, Pathol. Int., T. i; Wysskowsitch, Virchow's Arch., Bd. cii, heft 2; Copland, Lancet, 1884, Vol. i, p. 800; Shattuck, Boston Med. and Surg. Jour., March 31, 1881, p. 298; Osler, Arch. Med., Feb., 1881, p. 44; Bramwell, Am. Jour. Med. Sci., July, 1886; Walshe, Dis. Chest, p. 312; Hopkins, N. Y. Med. Rec., Feb. 6, 1886, p. 159; McClure, London Lancet, 1887, Vol. ii, p. 251; Musser, Jour. Am. Med. Ass'n, May 21, 1887, p. 561; Pollock, London Lancet, 1882, Vol. ii, Dec. 9.

⁸⁴ Wright, London Lancet, N. Y., 1881, Vol. ii, p. 406; Re Colin, Mém. de l'Acad. de Chir., T. iv, p. 429; Tussell, London Lancet, N. Y., 1881, Vol. ii, p. 219; Borden, Traité sur les Tisssu Muqueux; and others.

⁸⁵ Routh, Med. Times and Gaz., April 7, 1855; LaRoche, Pneumonia, p. 451; Weinlechner, Wiener med. Wochenschrift, 1884, S. 381; Fincham, London Lancet, N. Y., 1888, Vol. i, p. 524; Wachsmuth, Die Bluterkrankh., Magdeburg, 1849; Copland, Med. Dic., Vol. iii, p. 299; Parviri, Jour. Am. Med. Ass'n, June 20, 1885, p. 693; Barnes, London Lancet, N. Y., 1862, Vol. i, p. 389; Chomel, op. cit., S. 237; Tonnellé, Arch. Gén. de Méd., T. xxii, p. 487; Fox, op. cit., p. 161; Budin, Jour. Am. Med. Ass'n, Aug. 27, 1887, p. 285; Fleischmann, N. Y. Med. Rec., May 14, 1887, p. 562.

⁸⁶ Grissolle, Traité de la Pneumonie, Paris, 1864; Fox, op. cit., p. 162.

⁸⁷ Mygge, Nordisk. Med. Arch., 1881; Wilks, Ass. Med. Jour., Feb. 17, 1884, p. 145; Tennent, Glasgow Med. Jour., 1870, Vol. i, p. 74; Réichert, Am. Jour. Med. Sci., Oct., 1881, p. 441; Branton, Mat. Med. and Pharmacology, 1885; Mélier, Mém. de l'Acad. de Méd., T. x, p. 726.

⁸⁸ Doubleday, N. Y. Med. Rec., March 28, 1885, p. 343; Rooker, Cincinnati Lancet and Observer, Feb., 1862, p. 82; Copland, op. cit., Vol. i, p. 788; Fox, op. cit., p. 157; Peters, N. Y. Jour. Med., Vol. iii, p. 335; Van Bibber, Jour. Am. Med. Ass'n, July 28, 1888, p. 113; Martin, Human Body, p. 183 et p. 184; Huss, Alcoholismus Chronica, Stockholm, 1852; Callender, Holmes' Syst. Surg., Vol. i, p. 548; Lee, in Copland's Dic. Med., Vol. i, p. 788; Flint, Prac. Med., 1868, p. 180; Francis, in Ginroel's Baccus, p. 470; and many others.

⁸⁹ Sturges, op. cit., p. 82; Fox, op. cit., p. 161; Bamberger, Volkmann's Vorträge, Nr. 173; Stewart, Bright's Disease; Becquerel, Séméiotique des urines, 1841; Grissolle, op. cit.; Paget, London Lancet, N. Y., 1864, Vol. i, p. 189; McDowell, Ranking's Abst., 1856, No. 24, p. 65; Jones, Med. News, 1870, p. 113; Simon, Lancet, N. Y., 1851, Vol. i, p. 174; Jaccoud, Clin. Méd., 1867; Taylor, Med. Chir. Trans., 1845, p. 565; Turner, Lancet, 1884, Vol. i, p. 848; Bright, Guy's Hospit. Rpts., 1836; Rosenstein, Path. u. Therap., Nierenkrankh., S. 198; Loomis, N. Y. Med. Jour., Nov. 10, 1888.

⁹⁰ Elstein, Arch. f. k. Med., Bd. xxviii; Frerichs, Deutsche Med. Woch., 1881, Nr. 24; Juergensen, op. cit., S. 28; Patton, Jour

⁵¹ Hilton, London Lancet, N. Y., 1852, Vol. i, p. 262.

⁵² Hughes, Guy's Hospit. Rpts., Vol. ii, p. 336; Van Santvoord, N. Y. Med. Rec., March 17, 1883, p. 301.

⁵³ Erichsen—Lancet, N. Y., 1855, Vol. i, p. 357—found it present in 28 of 64 cases of grave surgical injuries submitted to post-mortem examination.

⁵⁴ Albutt, London Lancet, April 27, 1878; Schneorl, Deutsche Arch. f. k. Med., Bd. xlii.

⁵⁵ Farre, Lancet, N. Y., 1861, Vol. i, p. 341; Allan, *Ibid.*, 1881, Vol. ii, p. 223.

⁵⁶ Krönlein, Berliner Klin. Wochenschr., 1884, Nr. 9.

⁵⁷ Ferguson, Lancet, N. Y., 1859, Vol. i, p. 298.

⁵⁸ Czerny, Wiener med. Wochenschr., 1884, Nr. 17, 18 u. 19.

⁵⁹ Rowby, London Lancet, 1887, Vol. ii, p. 53.

⁶⁰ Wilkes, Guy's Hospital Rpts., Vol. i, p. 146; Holmes' Syst. Surg., Vol. i, p. 414.

⁶¹ Lutand, Lancet, 1887, Vol. ii, p. 235.

⁶² Laennec, op. cit., p. 250; Williams, Lancet, N. Y., 1862, Vol. ii, p. 31; Chomel, op. cit., S. 327. This is denied by LaRoche, op. cit., p. 351; Juergensen, Ziemssen's Handb., Bd. v, S. 351; et al.

⁶³ Eichberg, Cincinnati Lancet and Clinic, Dec. 15, 1883, p. 525.

⁶⁴ Wunderlich, Spec. Path.; Fox, op. cit., p. 158; Barth, quoted by Chomel, Pneumonie, Leipzig, 1841.

⁶⁵ Grissolle, Traité de la Pneumonie, 1864, p. 115.

⁶⁶ See cases of Andral, Med. Clinic, Vol. ii, p. 114; Williams, London Lancet, N. Y., 1862, Vol. ii, p. 4; Grissolle, op. cit., p. 316.

⁶⁷ Ralfe, Lancet, N. Y., 1881, Vol. i, p. 52; Flora, Cincinnati Lancet and Observer, April, 1865, p. 215; Day, London Lancet, N. Y., 1881, Vol. ii, p. 408.

⁶⁸ Ripley, N. Y. Med. Gazette, Nov. 25, 1882, p. 562; Siebert, N. Y. Med. Rec., May 30, 1885, p. 608.

⁶⁹ Bolles, Boston Med. and Surg. Jour., Feb. 3, 1881, p. 104; Lorey, Berliner Klin. Wochenschr., 1884, S. 32; Roosevelt, N. Y. Med. Rec., July 21, 1888, p. 80.

⁷⁰ Johnson, London Lancet, N. Y., 1864, Vol. ii, p. 605.

⁷¹ Griffiths, London Lancet, 1887, Vol. ii, p. 68.

⁷² Fowler, Lancet, 1884, Vol. i, p. 525; Barensprung, Arch. f. k. Chir., Bd. xviii, S. 557; Colles, St. Louis Med. and Surg. Jour., Oct., 1878, p. 195; Clark, Lancet, 1884, Vol. i, p. 525; Chvostek, Wiener Klinik, 1881, S. 132; Morehead, Diseases of India; DeCastro, Abcès du Foie, Paris, 1870; Frerichs, Klinik d. Leberkrankh.; Larive, Jour. Hebdom., T. iii, p. 220; Peage, Am. Jour. Med. Sci., 1837; Rai-

sipelas⁹² and chronic skin diseases,⁹³ cholera,⁹⁴ influenza,⁹⁵ glanders,⁹⁶ difficult dentition,⁹⁷ malarial intoxication⁹⁸ although some vehemently deny that it bears any causative relation to the disease in question,⁹⁹ typhus, typhoid¹⁰⁰ and other forms of continued fevers,¹⁰¹ plague,¹⁰² dysentery,¹⁰³ senile gangrene,¹⁰⁴ rachitis,¹⁰⁵ melanosis,¹⁰⁶ sweating feet,¹⁰⁷ vesicle calculus,¹⁰⁸ pulmonary phthisis,¹⁰⁹ gonor-

rhea and other venereal diseases,¹¹⁰ rheumatism,¹¹¹ pertussis,¹¹² mumps,¹¹³ etc.

Not only may various diseased states¹¹⁴ be accompanied by pneumonic fever, but the malady may follow the cure of some others, *e. g.*, chronic ulcers,¹¹⁵ chronic agues,¹¹⁶ rectal sinuses¹¹⁷ hæmorrhoids, etc.

A gentleman, æt. 50, for twenty years a martyr to bleeding piles, was operated upon by the injection of a glycerinated solution of carbolic acid. The operation was successful, but was soon followed by pneumonic fever, locally affecting the base of the right lung. Great relief followed the application of a blister to the affected side, a seaton to the inside of one thigh and of leeches around the anus. Recovery ensued.

(To be concluded.)

MEDICAL PROGRESS.

ON DIABETES MELLITUS.—SEESEN (*Zeitsch. für Klin. Med.*, XIII., p. 267) regards the mild form of diabetes—diabetes of the fleshy—as purely of a hepatic origin. The cells of the liver alone are affected; in consequence of an anatomical or chemical change as yet unknown they have lost their glycogenic power. A large portion of the sugar introduced by the food is thus no longer utilized but carried off in the urine. In this form of diabetes diet has great therapeutic effect. The severe form of diabetes, diabetes of the lean, is due on the other hand to a change of all the cells of the organism which have lost their power of utilizing the sugar furnished by the blood. Diet in these cases will merely have a pallia-

¹¹⁰ Biblioth. Med., T. xii. p. 117. Lancet, N. Y., 1859, vol. ii. p. 437.

¹¹¹ Lépine, Pneumonie, Wien, 1883, S. 89. Fuller, On Gout, etc., p. 383. Taylor, Med. Chir. Trans., 1845, p. 565. Schenlein, Klin. Med. Rev., 1845. Trousseau, L'Union Méd. 1855. Grisolle, op. cit., p. 173. Aran, Gaz. des Hôp., 1860. Lithgow, Lancet, N. Y., 1884, vol. i. p. 101. Vaillard, Proverbe Méd., No. 28. Eberle, Proc. Med., 1832, vol. i. p. 293. Sieveking, Brit. Med. Jour., Feb. 2, 1868. Ball, Thèse d'Aggrégation, 1866. Juergensen, op. cit., S. 144. Black, Lancet, N. Y., 1883, vol. ii. p. 458. Fernet, Thèse de Paris, 1865. Andral, op. cit., p. 118. Latham, Clin. Med., vol. i. Burrows, Lancet, July 26, 1845. Loomis, Phys. Diag., p. 60. Lemoine, Thèse de Paris, 1869. Monly, Thèse de Montfeli, 1876. Chomel, op. cit., S. 339. Davis, Proc. Med., 1884. Nicot, Thèse de Paris, 1839. Roupell, Lancet, N. Y., 1851, vol. ii. p. 218. Vasquez, Thèse de Paris, 1878. Peacock, Lancet, N. Y., 1821, vol. ii. p. 259. Sturges, op. cit., p. 70. Marmontier, Lyon Méd., 1873. Humblet, Arch. Méd. de Belges, 1888.

¹¹² Radcliffe, Lancet, N. Y., 1856, vol. ii. p. 279. Rpt. Bd. Health D. C., 1878. Copland, op. cit., vol. ii. p. 276. Hewitt, Whooping Cough, London, 1855. Tanner, op. cit., 290. Trousseau, Clin. Med., vol. i. p. 131. Laeune, op. cit., p. 102. Smith, Med. Chir. Trans., 1854. Vogel, N. Y. Med. Rec., May 14, 1887, p. 553. Marshall, Rpt. Me. Bd. Health, 1885.

¹¹³ Halderman, Jour. Am. Med. Ass'n, May 14, 1887, p. 544. In March, 1876, I saw a man, aged 35, who had been six days before, attacked by mumps. There had been but little inconvenience until the day previously, when he had a profound chill followed by swelling of the right testicle and inflammation of the base of the right lung. Recovery ensued after ten days.

¹¹⁴ For further information and cases consult U. S. Mar.-Hospit. Rpts., 1887, pp. 169, 206, 217, 222, 230, 295. Rpt. Roosevelt Hospital, 1875, pp. 24-25, and for 1874, p. 25. Low, Am. Med. and Phil. Reg., vol. iv. p. 31. Ingals, Jour. Am. Med. Ass'n, Dec. 17, 1887, p. 788. Hulke, London Lancet, 1887, vol. ii. p. 1064. Salvia, L'Ospedale, Lina, Rend. Statist. 1887-86, Naples, 1887. Hulbert, Rpt. Health Com. St. Louis, 1886, p. 276. Hirsch, Hist. Geog. Path., Bd. ii. p. 37. Crothers, London Lancet, 1887, vol. ii. p. 1010. Hawkes, Ibid., p. 1271.

¹¹⁵ Boursesche, Thèse de Paris, 1824.

¹¹⁶ Andral, op. cit., p. 159. Broussais, Chron. Phlegmas.

¹¹⁷ Allingham, Diseases Rectum, Phila., 1883, p. 18.

Am. Med. Ass'n, Oct. 10, 1886, p. 425; DeWolf, Ibid., Vol. i. p. 582, and Med. News, Jan. 7, 1883, p. 8.

⁹¹ Andral, op. cit., p. 168; Tanner, Dis. Children, p. 160; Grisolle, op. cit.; Rpt. Bd. Health D. C., 1878, p. 115; Gee, Reynolds' Syst. Med., Vol. ii. p. 344; Chomel, op. cit., S. 328; London Lancet, 1884, Vol. i. p. 856; Rilliet et Barthez, Mal. des Enfants, T. iii, p. 264; Northup, N. Y. Med. Rec., July 23, 1887, p. 114; Bartels, Virchow's Archiv., Bd. xxi, S. 756; and others.

⁹² Billard, Mal. des Enfants, Paris, 1828, p. 113; Lee, op. cit., p. 956; Busk, Holmes' Syst. Surg., Vol. i. p. 531; Strauss, Rev. Mensuelle, Sept., 1879; Labbé, Thèse de Paris, 1858, p. 57; Sutton, West. Lancet, Nov., 1843; Austin, U. S. M.-H. Rpts., 1884, p. 123; Stokes, op. cit., p. 339; Fox, op. cit., p. 160.

⁹³ Lancette Française, 1837, p. 243.

⁹⁴ Gubian, Thèse de Paris, 1855; Wassige, Bull. Acad. de Méd. de Belg., 1849, T. iv. p. 24; Moering, Hist. Chol., etc., Leip., 1830; Sturges, op. cit., p. 157.

⁹⁵ Wilson, Fevers, N. Y., 1881, p. 33; Sydenham, Works, by Wallis, p. 330; Mussey, Clin. Méd., Paris, 1874; Guiteras and White, Phila. Med. Times, April 10, 1880; Peacock, Influenza, London, 1848; Graves, Clin. Med.; Hamilton, Influenza, London, 1786.

⁹⁶ Poland, Med. Times and Gaz., Mar., 1869; Dickinson, London Lancet, Vol. i. 1869.

⁹⁷ Patton, Jour. Am. Med. Ass'n, Aug. 11, 1883, p. 140; Fox, op. cit., p. 157; Ziemssen, Pleuritis u. Pneumonie, Berlin, 1862.

⁹⁸ Hippocrates, op. cit., p. 105; Frank, Prax. Med., Lib. ii. p. 315; Lancisi, De Nox. Paludum Effluviis; Sydenham, op. cit., p. 33; Cleghorn, Dis. Minorica, p. 257; Wells, Trans. Med. Chir. Soc., Vol. iii. p. 527; Jackson, Feb. Dis., London, 1820, Vol. i. p. 10; Bell, Med. Phys. Jour., Vol. ii. p. 316; Rush, Works, Vol. iii. p. 9; Macculloch, Malaria, p. 442; Williamson, Med. Reg., Vol. iii. p. 453; Boat, Life of Armstrong, Vol. ii. p. 41; Anderson, Trans. Ala. St. Med. Ass'n, 1854; Yates, Bilious Fever, Albany, 1813, p. 27; Sarcione, Mal. de Naples, etc., Lewis, N. O. Med. Jour., Vol. iv. p. 28; Bizzell, Trans. Ala. Med. Ass'n, 1875; Gaines, N. O. Med. Journal, 1867; Ford, St. Louis Med. and Surg. Jour., Feb., 1875; Manson, N. O. Med. Jour., Sept., 1857; Delacroix, Thèse de Paris, 1835; Skoda, Allgem. Wiener Med. Zeit., 1862, No. 42; Ballard, N. W. Med. Jour., July, 1849, p. 93; Chomel, op. cit. S. 240; Holt, N. Y. Med. Jour., Feb. 21, 1855, p. 217; Lescher, N. W. Med. Jour., Mar., 1850, p. 509; Wallian, N. Y. Med. Jour., Feb. 7, 1885, p. 166; Fleury, Jour. Univ., T. liv. p. 354; Cazentrie, Lancette Française, T. viii. p. 343; Matthews, N. W. Med. Jour., Jan., 1849, p. 383; Bell, N. Y. Med. Jour., Feb. 7, 1855, p. 165; Fox, op. cit., p. 157; Roche et Janson, Eleu. de Path., T. i. p. 582; Van Bibber, Jour. Am. Med. Ass'n, July 28, 1888, p. 112.

⁹⁹ Loomis, N. Y. Med. Jour., Feb. 7, 1885, p. 165; Sternberg, Malaria, N. Y., 1884; Schultz, Am. Prac., Aug. and Sept. 1879; Flint, op. cit., p. 181; LaRoche, op. cit.; and others.

¹⁰⁰ Murchison, Continued Fevers, p. 184; Tweedie, Lancet, N. Y., 1860, Vol. ii. p. 7; Stokes, London Lancet, N. Y., 1854, Vol. ii. p. 293, and 1855, Vol. 2, p. 121; Wilson, On Fevers, p. 182; Copland, London Lancet, 1884, Vol. i. p. 335; Schultz, Jour. Am. Med. Ass'n, July 31, 1886, p. 119; Flint, op. cit., p. 820; Gueneau de Mussy, Gaz. des Hôp., Avr., 1846; Sauvages, Syst. Nosol., Vol. i. Fodéré, Med. Reg., T. v. p. 351; Chomel, op. cit.; Bartlett, Fevers, p. 111; Hosack, Med. Reg., Vol. iii. p. 449; Wood, Prac. Med., p. 39; LaRoche, op. cit., p. 450; Huxham, Fevers, p. 59; Jackson, Boston Med. and Surg. Jour., Montault, Mém. de l'Acad. de Méd., T. vii. p. 209; Cotting, Med. Addresses, 1875, p. 111; Louis, Fiev. Typh., T. i. p. 360; Barlow, Lancet, 1884, Vol. i. p. 745; Curtis, Boston Med. and Surg. Jour., May 11, 1876, p. 551; Trousseau, Clin. Med., Phila., 1873, Vol. ii. p. 260; U. S. Marine-Hospit. Rpts., 1883, p. 190; Harley, St. Thomas' Hospit. Rpts., 1873; Diomantopulos, Typhus of Smyrna, Wien, 1888.

¹⁰¹ Veale, British Army Rpts., 1879. Wernich, Zeitsch. f. Klin. Med., Bd. iv. S. 385. Deslais, Thèse de Paris, 1877. Wilson, op. cit., p. 182. Parry, Am. Jour. Med. Sci., Oct., 1870, p. 356. Barrella, Bull. de l'Acad. de Méd. de Belg., 1877, p. 124. Dublin Jour. Med. Sci., Vol. viii. p. 334.

¹⁰² Rivierius, De Feb. Pest., L. ii. p. 95.

¹⁰³ LaRoche, op. cit., p. 451.

¹⁰⁴ Coote, Holmes' Syst. Surg., Phila., 1881, Vol. i. p. 303.

¹⁰⁵ Parry, Am. Jour. Med. Sci., Jan., 1872, p. 23. Fox, op. cit., p. 156.

¹⁰⁶ Stein, N. Y. Med. Rec., May 21, 1887, p. 517. Todd, Jour. Am. Med. Ass'n, July 14, 1888, p. 53.

¹⁰⁷ Jour. l'Experience, T. i. p. 488.

¹⁰⁸ Roberts, London Lancet, N. Y., 1859, Vol. i. p. 128.

¹⁰⁹ Watson, Prac. Phys., 1845, p. 581. Chomel, op. cit., S. 83. Moxon, Med. Times and Gaz., Jan. 21, 1871. Copland, op. cit., vol. iii. p. 1215. Sturges, op. cit., p. 96. Louis, On Phthisis, p. 38. Formad, Jour. Am. Med. Ass'n, vol. ii. p. 144. Gerhard, Dis. Chest, 1860, p. 248. Andrew, Lancet, 1884, vol. i. p. 786. Leudet, Arch. Gén. de Méd., May, 1885. Williams, London Lancet, N. Y., 1862, vol. ii. p. 7. Wendt, N. Y. Med. Rec., Oct., 1884, p. 430. Samter, Berliner Klin. Wochenschr., June 23, 1884. Kiinnicut, N. Y. Med. Rec., Oct. 11, 1884, p. 399. See, Le Prog. Méd., Dec. 8, 1883; and many others.

tive effect. In patients with diabetes, besides tuberculosis, a special fibrous pneumonia (already described by Riegel) is often observed. Fink reports a new case (*Münch. Med. Woch.*, No. 37, 1887) in a man 32 years old, who had been afflicted for three years with sugar-diabetes, and in whom three months before death an indurative sclerosis of the right lung, with dilatation and purulent secretion of the bronchii, had been diagnosed. Tubercle-bacilli were never found in the sputa. The autopsy confirmed the diagnosis, but did not show in the sclerosed tissue any bacilli nor tubercular nodules.—*Revue des Sciences Médicales*, No. 66, 1889.

GONOCOCCI IN A DISCHARGE FROM THE URETHRA WITHOUT SEXUAL INTERCOURSE.—PROF. STRAUS reports (*Arch. de médecine expérimentale*, No. 3, 1889) the case of a youth 16 years old who had practiced masturbation for four years and who, a week before applying to the physician, M. Mauriac, had practiced the vice more actively than usual. Two days afterwards pains while urinating, and shortly after well-defined symptoms of gonorrhœa, were noticed. Patient absolutely denied that he had had any intercourse with women, and M. Mauriac was inclined to give credence to his assurance. The discharge contained the typical gonococci of Neisser, and it was impossible to distinguish them from those found in the discharge of a patient afflicted with common gonorrhœa.

If the assertion of the young man was truthful a great deal of importance attaches to this case, as it goes to show that the gonococcus of Neisser may exist as an inoffensive lodger and simple saprophyte in the healthy urethra, and that under the influence of harmful irritation it may invade the epithelium and cause the characteristic catarrh.—*Revue Médicale de l'Est*, No. 9, 1889.

ON THE DEVELOPMENT OF MALARIA PARASITES IN FEBRIS TERTIANA.—The causal relations between the peculiar plasmodii occurring in malaria inside of the red blood-corpuscles and the origin of the disease are almost universally recognized by the investigators of the present time. Most of them, as for instance Laveran, Marchiafava and Celli, Councilman, etc., do not hesitate to ascribe diagnostic significance to the proof of the existence of these formations in the individual case. Golgi goes a step farther. Already in earlier works he had attempted to show that the malaria parasites in the blood of patients go through a regular course of development, the various stages of which are closely related with the recurring fever attacks.

Inside of the red blood-cells pigmented formations are said to grow from the uncolored amœboid, incipient forms of the plasmodii which constantly grow in size by absorbing the substance of the

blood-corpuscles, and finally begins to divide, a process which coincides precisely with the beginning of the fever, or precedes it directly. The result of the division is the birth of new generations of microorganisms which gain an entrance into other red blood-corpuscles and there continue the process, *i. e.*, cause new attacks of fever, whilst the remaining melanin which originated at the destruction of the hæmoglobin and had been freed by the process of division, is absorbed through phagocytosis by the leucocytes in the circulating blood or inside the organs.

It is claimed that the presence of the perfectly developed bodies and of the immature ones indicates the impending outbreak of an attack, that by accurate observation of the various stages of development of the parasite the beginning of an attack can be foretold one or two days previously, and finally that it can be shown whether the conditions exist for a single attack (*febris quartana*), or for two attacks (double *febris quartana*), or for three attacks (trifold *febris quartana*, *i. e.*, forms of the *febris quotidiana*), according to whether one generation or several successive generations of the plasmodii appear. All these facts had been established only for the *febris quartana* with its varieties just mentioned, whilst according to Golgi's opinion the parasite causing the malarial infection in *febris tertiana* must have a different course of development.

To prove in detail this latter statement is the purpose of an article by Golgi in *Fortsch d. Med.*, 1889, No. 3, according to which the essential points of difference between the tertian and quartan species of the plasmodii are as follows: The amœboid forms, not pigmented, which represent the incipient stage in the development of the micro-organism and always lie inside of the red blood-corpuscles, show much more lively movements in *febris tertiana* than in *quartana*; they are, furthermore, capable of destroying and absorbing the hæmoglobin of the blood-corpuscles with especial rapidity, so that in *febris tertiana* the infected blood-cells appear as colorless formations in the first hours of the day between the two attacks, whilst in *febris quartana* their characteristic yellowish-green coloring is preserved to the end. The protoplasm of the *tertiana* plasmodii has a more delicate look than that of the *quartana*; the former deposit the pigment within themselves in a much finer, small granular mass than the latter; but above all the process of division occurs in the two in an essentially different manner. In the *tertiana* each plasmodium is divided into 15-20 new elements, in the *quartana* into 6-12, which are correspondingly larger than the former. In the interior of the globules thus formed, *i. e.*, of the parasites, in the *quartana* a glittering little body is seen, a sort of nucleus, which is missing in the *tertiana*, etc.

"These points of difference enable us, by means

of a simple examination of the blood to recognize *febris tertiana* and to make its differential diagnosis from other varieties of *febris intermittens*. The relations between the various stages of development of plasmodii and the stages of the disease are the same in *febris tertiana* as in *febris quartana*."

In view of the importance which these observations of Golgi, if proven correct, have for our knowledge of the character of malaria, it is desirable that at least the principal types of the most important and most characteristic forms here described be made more generally known by photography.—*Centralblatt für Bakteriologie und Parasitenkunde*, No. 18, 1889.

ON CARDIAC CONTRACTIONS.—VON ZIEMSEN studied, by the aid of tracings, the successive phases of the cardiac revolution. Between the moment of complete relaxation and of the first valvular tone, the contraction is represented by a rather quickly ascending curve followed by a line still ascending approaching the straight, but a little longer and approaching more the horizontal. Between the first and second murmurs the cardiac sketch presents an ascending, almost vertical line, terminating in a rounded bend the summit of which corresponds to the most active phase of contraction. Then the curve descends again about as rapidly to a level a little above that which corresponds to the beginning of this second phase. The curve ascends again twice, but feebly. Of these two summits, which are much lower than the first and correspond to a normal diastole, the last one is the lower and coincides with the second murmur. Thereupon the curve descends again a little less abruptly to the lower level of the trace, the whole of which thus represents the totality of a cardiac revolution. The experiments made with alcohol and digitalis prove that, with the latter, the duration of the phase intervening between complete relaxation and the first valvular murmur is alone influenced; it is shortened with the former and prolonged with the latter. This duration was from 0.18 to 0.46, the normal duration being 0.25. In the same experiments the remainder of the trace and the respective duration of the other phases did not differ from the normal.—*La Semaine Médicale*, No. 17, 1889.

EXPERIMENTAL PRODUCTION OF RENAL CALCULI.—EBSTEIN, of Göttingen, has made, together with NICOLAÏER, experiments on dogs and rabbits, and succeeded in producing in these animals, by introducing oxamide into their food, renal concretions, the most voluminous of which was found in the pelvis of the kidney, whilst the gravel or grit of the oxamide was found in all parts of the urinary apparatus. Although the oxamide injected was white, the renal concretions

were of a greyish yellow. The largest of them showed on their surface wrinkles and roughness. The calculi are quite hard and, on polishing them, one finds upon the surface thus obtained circles or parts of concentric circles, between which concentric layers can be seen presenting radiating striations. These concretions are composed of oxamide and an organic skeleton showing the reaction of an albuminoid substance. By treating these calculi with hot water of 80° to 90°, the oxamide dissolves and leaves a bare organic skeleton, the sections of which show an aspect similar to that of the ground surfaces; only the suppression of the radiations reveals the relation existing between these starred fibres and the presence of oxamide.—*La Semaine Médicale*, No. 17, 1889.

ON THE UTILITY OF SPECIFIC GRAVITY AND THE QUANTITY OF ALBUMEN IN PATHOLOGICAL TRANSUDATES AND EXUDATES FOR THEIR CLINICAL DETERMINATION.—DR. E. NEUENKIRCHER, of Riga, gives as the result of a series of calculations the following: Pleural and peritoneal transudates and exudates are characterized according to their genesis by various specific gravities. The average figures of the specific gravity are lowest in pleural and peritoneal transudates caused by morbus Brightii; a higher specific gravity is shown by peritoneal liquids in cirrhosis hepatis, then follow the pleural and peritoneal transudates in general venous stasis, the ascites in carcinoma hepatis, the pleural and peritoneal exudates in carcinoma peritonei and pleuræ, the exudates in idiopathic and tubercular pleuritis, and the highest specific gravity is shown by exudates in purulent pleuritis. For prognostic purposes of an individual case the changes of the specific weight in repeated punctures can be utilized only with great care. As a general rule, the falling off of the specific gravity in such cases denotes a deterioration of the general condition of the patient and presents an evil prognostic symptom.—*St. Petersburger Medicinische Wochenschrift*, No. 13, 1889.

A CASE OF ALOPECIA AREATA AFTER OPERATING ON THE NECK.—PONTOPPIDAN has made an observation in a man (*Monatssch. f. prakt. Dermat.*, viii, 2, S. 51), which is closely related to the examinations made by Joseph (Berlin) of the second cervical nerve of the cat. A girl 10 years of age was operated upon for a glandular swelling the size of a pigeon's-egg in the left carotid region. That portion of the glandular growth imbedded deeply was adherent to the external jugular vein, and during the loosening of it a rather violent bleeding from a rent in the vein occurred. The hæmorrhage was stopped by tampon with iodoform gauze saturated with sublimate solution and compression with bandage. After removing the latter on the twenty-first day two symmetrically bald spots, circular, about of the size of a dollar,

were discovered on the back of the neck. Micro-organisms could not be found. The spots rapidly grew in size; new ones appeared toward the middle of the head and behind the ears, and ran together. After about seven weeks the height of development was reached, and then the extent of symmetrical baldness corresponded to the area supplied by the N. occipit. maj. and minor and the rear branch of the N. auricularis magnus. The skin was smooth and normal, sensibility not disturbed. Five weeks later the entire portion was covered quite thickly and uniformly with new lanugo-like hairs.

Here is an illustration of an alopecia areata occurring after a lesion of the upper cervical nerves. The most probable explanation is that a neuritis was caused by the tampon and the compression of the origines of the cervical nerves. The symmetrical spreading of the baldness toward the side not operated upon is remarkable. Pontoppidan considers an invasion of the corresponding nerve area of the other side, perhaps by a neuritis centripetally transmitted, as possible.—*Centralblatt für Physiologie*, No. 2, 1889.

ON THE TREATMENT OF THE PAINFUL SYMPTOMS OF PHTHISIS OF THE LARYNX.—It is especially in cases where the lesions predominate on the level of the upper orifice of the larynx that intense pain is experienced at every movement of deglutition, preventing the most indispensable functions for strengthening the organism—those of alimentation. Previous to the discovery of cocaine opiates constituted the most efficacious means for relieving the sufferings of the patient. The muriate of morphine may be mixed either with an inert powder (powdered sugar), or with an antiseptic or modifying powder, in the following proportions:

Powdered sugar 10 gr.
Powder of muriate of morphia 1 gr. or 0.50 gr.

OR

Iodoform (pulverized) 10 gr.
Powder of muriate of morphia 1 gr. or 0.50 gr.

A pinch of one of these powders is put into an insufflator bent for the purpose, and, with the aid of a mirror, applied to the ulcerated parts. This little operation may be done preferably in the evening, so as to serve the two-fold purpose of rendering alimentation and sleep possible. As stated above, the discovery of cocaine has furnished us with a means of much greater efficacy for local anæsthesia. This drug appears to best advantage in the treatment of phthisis of the larynx. The muriate of cocaine can be applied by insufflation the same as morphia, in one of the following proportions:

Powdered sugar or iodoform 10 gr.
Muriate of morphia 1 gr. or 0.50 gr.
Muriate of cocaine 1 gr. or 0.50 gr.

But its effect is greater in solution, in water mixed

with glycerine, so as to enable the liquid to better adhere to the tissues.

Water 5 gr.
Glycerine 2 gr.
Muriate of cocaine 1 gr. or 0.50 gr.

By means of pincers or bent wadding-carriers, and with the aid of a mirror, the epiglottic and aryteno-epiglottic region is washed with this solution and thus within a few minutes an anæsthesia is obtained sufficient to allow the patient to take his meal without great suffering,—*Journal de Médecine de Paris*, Vol. xvi, No. 16, 1889.

A CASE OF TÆNIA IN A BABY 10 WEEKS OLD.—A baby 10 weeks old was brought to DR. MENSINGA, of Flensburg, the father of the child having previously shown to him a sort of worm said to have come from the anus of the patient. With the child the parents brought, in alcohol, about twenty links of a tænia. The baby had just had a stool. The fæces in the diapers were quite compact and full of moving proglottides which, changing peristaltically their forms, completely pervaded the fæces.

It was discovered that the man had killed a pig when the child was two weeks old and, on finding that it was measly, sold it in the city. Peculiar circumstances must have combined to introduce the germ of the tænia into the baby. Nourishment—milk not boiled—being given to the latter with the bottle, the dishes had probably been used for the milk as well as for the pig-killing, and not being cleansed thoroughly, having thus carried the affection to the child.—*Internationale Klinische Rundschau*, No. 17, 1889.

CALCULATION OF SMALL QUANTITIES OF SUGAR IN THE URINE.—To ascertain the quantity of sugar in the urine when less than 0.2 per cent. is difficult but useful. Some individuals have but a small quantity of sugar in the urine when they have taken a great deal of hydrocarbons, and in the lighter cases of diabetes it is this kind of food which causes glycosuria.

POLLATSCHKE (*Deutsche Med. Wochenschrift*, No. 18, p. 354, 1888) advises to treat the urine with carbon before reducing the copper. A small quantity of charcoal is put into the test-tube, the mass is stirred up and filtered; the urine is then clear and freed from substances which might render the analysis uncertain. In another test-tube equal proportions of solution of sulphate of copper, Rochelle salts and soda are mixed and heated. If the mixture remains clear the filtered urine is added and heated again; the precipitate is yellow, rarely red. For control subnitrate of bismuth, hydrochlorate of phenyl-hydracine, which Jaksch recommends, is used.—*Revue des Sciences Médicales*, No. 66, 1889.

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SATURDAY, JULY 13, 1889.

THE ANNUAL MEETING AT NEWPORT.

The Fortieth Annual Meeting of the Association was in every respect a success. The Committee of Arrangements had so perfectly accomplished its work that ample provision was made, not only for the General Sessions, but for each of the Sections as well.

The Association was particularly fortunate in the selection of its officers. The programme for each Section gave evidence of thorough and judicious preliminary work.

The profession of the entire country was represented in the preparation and discussion of papers. Every hour assigned to Section-work was fully occupied, and in several instances two, and even three extra sessions were required to complete the programme.

Attractive as were the social features arranged for each day, still it was a noticeable fact that but few of the members could be diverted from the real purposes of their assemblage, and from first to last each Section was ably represented by a full corps of earnest workers.

Many papers of unusual value were presented, and their careful perusal, as they shall appear in THE JOURNAL, will reward the reading.

BEDSIDE HYGIENE IN TYPHOID FEVER.

The instructive Address on State Medicine given by DR. W. H. WELCH, of Baltimore, at the recent meeting of the Association, should emphasize anew in the mind of every general practitioner the oft taught, but oft neglected, lesson,

that the physician's duty in cases of infectious disease is but half fulfilled in his most solicitous care for the patient's individual welfare. To prevent the extension of the malady from the sick-room to the household—from the household to the community, is an even more important obligation.

Although the mystery of the *vera contagia* is still unsolved in a strictly scientific sense, enough is known of the ordinary conditions of their evolution and transmission in many instances to facilitate the application of what we may venture to call "clinical hygiene." Aside from all theoretical controversies concerning the part played by microorganisms—as causes, carriers, or merely ferments operative only in suitable media—we know that a morbid something is extruded from the sick; in the cases most commonly brought under our attention we know the channels of extrusion; and with this knowledge we can reasonably, if empirically, adopt appropriate preventive measures.

For example: In the specific diarrhœal disorders of which typhoid fever may be taken as a type, it is generally agreed that the infective *materies morbi* lies in the intestinal excreta, and that even in these, when freshly voided, we have an interval of comparative innocuousness during which precautions may be safely exercised. If action be promptly taken at this time, we may spare ourselves the perplexing consideration of the relative dangers of contamination of water, soil, air, or food; but if such action be tardy or unintelligent, the widespread resultant mischief may long baffle the wisest resources of public sanitation. Assuming Eberth's bacillus to be at least the specific ferment whereon depends the evolution of the virus of enteric fever, it seems proven that this microzyme can sustain itself, for some days, at all events, under a temperature exceeding 112° Fahr., or below the freezing point; that it sporulates in the range between 66° and 104°; that it multiplies even more vigorously in comparatively pure than in very impure water; that it finds a congenial habitat in damp soil, and yet resists desiccation for an undetermined period. It is destroyed by boiling, by even weak solutions of mercuric bichloride, by chloride of lime and some other chlorides, and its growth is retarded by acids. The safest disinfectant to be intrusted to unskilled hands is fresh chloride

of lime, or the official solution of chlorinated soda. For the excreta, the former of these may be used in saturated solution, or the latter undiluted, and they should be employed immediately; for textile fabrics which have been soiled by the discharges, and which it is undesirable to burn, boiling will be effective, but it should be done as soon as possible after the soiling. Disinfection by steam of bedding and other articles which cannot be thus treated is hardly practicable until, if ever, public provision shall be made for it. With proper care in nursing, however, such things may be easily protected from infection. Even during convalescence, vigilance with regard to the dejecta should not be relaxed, as in exceptional cases bacilli have been found in the stools a fortnight after the reduction of the temperature to the normal line.

The task of bedside sanitation thus outlined is neither a difficult nor an exacting one, and if the family physician bear it always in mind he will forestall the far less hopeful labor of the health officer.

AN INTERESTING CASE OF ASTHMA.

In the *Berl. Klin. Wochenschr.* of December 10, 1888, there was reported by PAWINSKI a case of asthma which presented a remarkable condition of auto-intoxication, apparently, as shown by the urine. Large amounts of acetone were discovered in this secretion upon the occurrence of each attack of asthma, while during the intervals it could be found only in traces. The patient, a young woman, was seized by the asthma after having been at a dance the previous night. When seen by Pawinski she presented the customary phenomena of such an attack, together with demonstrable enlargement of the heart. The case was under observation for some time and always presented acetonuria. It subsequently terminated fatally.

This case is of special interest for two reasons:

1. Because it indicates that acetone, which is known to be linked to an increased decomposition of the tissues, as in fever, carcinoma, diabetes, starvation and the like, may be produced by conditions in which so disastrous a breaking up of tissue is not apparent and might, therefore, be overlooked, and that the accumulation of this substance in large amounts acts as a profound poison to the central nervous system. 2. Because

systematic examinations of the urine, in cases of asthma, may lead to the detection of many conditions not now recognized as predisposing causes of asthma.

"A word to the wise is sufficient," and hence, if one will profit by the lesson taught by this case, he will not neglect the examination of the urine in each case of asthma whose etiology is at all obscure.

THE RENOVATION OF NAPLES.

At last wise counsels have gained the ear and the confidence of the Italian Government. The phrase "See Naples and die," had come to have a fearful and literal significance, and the Neapolitan fever was the dread of all foreign travelers. But the day of its renovation has come to the beautiful city of Naples.

What Italy does, it does thoroughly, and this is no ordinary movement which the Government is making. It means the demolition of seventeen thousand houses and of sixty-two churches in the very heart of the city. It means the expenditure of over forty millions of dollars in one stupendous sanitary work, the cost to be borne mainly by the Italian Government. But let the health and prosperity of Naples be once more assured and the returns, even for this large expenditure, will be tenfold. The impetus thus given to the subject of sanitary science is to be world-wide in its results. Other cities have like needs. Other governments should follow this example.

INDIVIDUAL EFFORT.

It would seem a small matter that during the ensuing year each member of the Association should secure for THE JOURNAL one additional subscriber. The doubling of the subscription list would warrant such an outlay for the improvement of THE JOURNAL as would well repay the effort. The Association would at once command a wider influence and the profession at large secure to themselves a benefit too valuable to be lost. Will those members of the Association who have its welfare and the best interests of the profession at heart give us a helping hand, while we labor earnestly to increase the value and usefulness of THE JOURNAL?

Will each member secure one new subscriber?

EDITORIAL NOTES.

HOME.

MCGILL UNIVERSITY.—Dr. George Ross has been appointed Professor of the Practice of Medicine, and Dr. Richard Z. McDonnell Professor of Clinical Medicine in the Medical Faculty of the University.

DR. WM. W. KEEN succeeds the late Dr. S. W. Gross as Professor of Surgery in Jefferson Medical College, Philadelphia.

DETROIT BOARD OF HEALTH.—At the annual meeting of the Board of Health of the city of Detroit Dr. Wm. Brodie was elected President. The members of the Board are, Dr. Brodie, Dr. Chapaton, His Honor, the Mayor, the President of the Police Commission, the Comptroller and Dr. Klein.

THE authorities of Harvard University have invited Sir Edwin Arnold to deliver a course of lectures to the students on subjects of his own selection.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION will meet at Evansville, Ind., September 24, 25 and 26, 1889.

THE AMERICAN PHARMACEUTICAL ASSOCIATION held a very successful convention at San Francisco from the 24 to the 29th ult. The following officers were elected: President, Emlen Painter, New York; First Vice-President, Karl Simmons, St. Paul; Second Vice-President, W. M. Searby, San Francisco; Third Vice-President, J. W. Eckford, Aberdeen, Miss.; Treasurer, S. A. D. Sheppard, Boston; Permanent Secretary, J. M. Maisch; Reporter on Progress of Pharmacy, C. Louis Diehl, Louisville, Ky.; for Members of the Council to serve three years, Loe Eliel, South Bend, Ind.; W. S. Thompson, Washington; John H. Dawson, of San Francisco. The next meeting will be held at Old Point Comfort, Va., the second Monday in September, 1890.

THE PRESBYTERIAN HOSPITAL at Philadelphia is the recipient of \$100,000 donated by Lady Courtright and to be used to found a Convalescent's Retreat. She has also given \$50,000 to the Hospital to build a male surgical ward and to endow two free beds.

EXPLANATORY.—It is due to the readers of THE JOURNAL to state that while the President's

Address and other matter pertaining to the meeting at Newport was in type, it was deemed advisable not to present them in the last issue of a closing volume, and thus separate them from all that was to follow in the new volume which was to commence with the next issue. It seemed better to issue the first number of the new volume three days in advance of the date assigned and thus present an unbroken series of papers, and that only four days later than they would have appeared in the previous issue.

FOREIGN.

IN FRANCE the heirs of the late M. Chevreul have presented his valuable scientific library, numbering 10,000 volumes, to the Paris Museum of Natural History.

IN SWITZERLAND the profession is well organized. The Schweizerischer Aerztlicher Central Verein, Société Médicale de la Suisse Romande, and Società Medica della Svizzera Italiana held joint meetings at Berne on May 25.

IN GERMANY an Odontological Society has been organized in Berlin under the presidency of Prof. Busch. Drs. E. von Bergmann and von Esmarch have recently been honored with high appointments in the Sanitary Corps of the army. Dr. Curtius, of Erlagen, and Dr. Guttermann, of Göttingen, two young German Professors of Chemistry, have accepted a call from the faculty of the new Clark University of Worcester, Mass.

IN INDIA rain has fallen in the Ganjam district, and the number of deaths from cholera has decreased from 1029 to 865. Dr. Waddell, Deputy Sanitary Commissioner for Bengal, is investigating the question as to whether venomous snakes are anti-toxic. Dr. Patric Hehir, in his report on Cholera in the Chudder-Ghaut municipality, and referring to the pollution of the drinking water as the main cause of the epidemic, says: "While investigating the cause of an outbreak in the village of Kharatabad, I noticed a woman washing the clothes of her husband (who had died of cholera), in a large well from which several persons were actually drawing water for drinking purposes." Leprosy is on the increase.

IN ENGLAND there has been a meeting of delegates to make preliminary arrangements for organizing an International Congress of Hygiene and Statistics to meet in London in 1891. There

are 402 medical practitioners and 119 medical students on the roll of the British Medical Temperance Association. Dr. C. B. Radcliff, an eminent physician and an authority on nervous diseases, died recently in London. A feature of the *British Medical Journal* is the occasional column contributed by the Editor, entitled "Topics of the Day." The Charity Organization Society is about to petition the House of Lords for an inquiry in regard to the administration and organization of hospitals, dispensaries, and poor law infirmaries. The British Medical Association will hold its fifty-seventh annual meeting at Leeds from August 13 to 16. A new hospital for patients suffering from infectious diseases has been opened at Muswell Hill. At Cambridge University, Dr. W. H. Gaskell, University lecturer in advanced physiology, and Marshall Hall Prize-man for his researches on the nervous system, has been elected to a fellowship at Trinity Hall. The Prince of Wales leads the movement that the people of England shall give practical expression to their admiration of Father Damien by the erection of a monument to his memory at Molokai.

SOCIETY PROCEEDINGS.

American Medical Association. Fortieth Annual Meeting, at Newport, R. I.

Section on the Practice of Medicine, Materia Medica and Physiology.

FIRST DAY, JUNE 25, 1889.

The session was opened by an introductory paper on *A Review of Progress*, by Dr. F. C. SHATTUCK, of Boston, Chairman of the Section. A complete résumé of all later forms of treatment was placed before the Section. (See p. 19.)

DR. CHAS. G. STOCKTON, of Buffalo, read a paper *On the Passage of Portal Blood into the General Circulation, and its Probable Relations to Toxæmia*. This elicited quite a spirited discussion, in which some of the claims of the essayist were criticised, but ably answered by Dr. Stockton.

DR. G. R. MARTINE read a paper entitled *A New Plan for the Treatment of Pneumonia*, which was virtually the Veratrum Viride treatment. Discussion entered into by Drs. Hall and Atkinson.

DR. I. H. MUSSER presented a paper on *Some Clinical Aspects of Vomiting*, dwelling on the various forms of vomiting and their differential diagnosis.

DR. I. E. ATKINSON read an extensive paper on *Some of the Rarer and Graver forms of Cinchonism*. The discussion which followed was taken part in by the two classes of practitioners who advocated on the one side, and on the other deprecated the use of large doses of quinine.

DR. ROBERT T. EDES read a paper on *Hydro-nephrosis; Especially as Caused by Functional Disorders of Micturition*.

SECOND DAY, JUNE 26.

DR. FELL, of Buffalo, presented to the Section on Medicine an apparatus for keeping up respiration in narcotic poisoning. With this means he had saved four lives that would have been lost without the use of the apparatus.

DR. FRANCIS DELAFIELD read a paper on *Chronic Endocarditis*. The paper was thoroughly discussed by Dr. Pepper.

DR. WM. OSLER reported an interesting case of *Word Blindness with Hemianopsia*, together with a presentation of specimens and diagrams. Dr. Osler also exhibited specimens of brains, prepared according to the Italian method.

DR. JAMES TYSON, of Philadelphia, read a paper on *The Induction of Premature Labor in Bright's Disease Complicating Pregnancy*.

DR. VAUGHAN, in discussing the paper, agreed with the essayist in the main points except as to its induction in primipara. Establishing it as a rule to induce premature labor in such patients that have had similar experience previously. He treated by limiting the patient's diet and assisting elimination.

DR. ATKINSON insisted on this plan of treatment as soon as the mildest symptoms were manifested. The most frequent and dangerous cases are due to the contracted kidney.

DR. SCOTT gave the Section a review of his valuable and long experience.

DRS. CHAMBERLAIN, CARPENTER, TRUAX and NELSON added their arguments to the discussion.

DR. PRENTISS next called attention to the importance of the work in forming the Pharmacopœia of 1890.

Dr. Prentiss also moved that the Chairman of this Section be requested to offer the following resolution at the general meeting to-morrow (Thursday):

Resolved, That the President of the American Medical Association be authorized to appoint three delegates to the Convention for the Revision of the U. S. Pharmacopœia, which meets in Washington in May, 1890.

Carried.

DR. GEO. M. GARLAND's paper on *Raynaud's Disease*, with report of a case, was received with great favor. The presentation was rendered more interesting by the exhibition of illustrations.

DR. CARPENTER had seen the patient whose history was given in this paper, and treated him during the latter part of his life.

DR. SHOEMAKER treated on the new remedy, *Dioscora Villosa*.

THIRD DAY, JUNE 27.

DR. VAUGHAN opened the meeting with a paper on *The Etiology and Pathology of Typhoid Fever*. In it he presented a detailed history of all investigations and discoveries hitherto brought forward, and an enumeration of experiments made by himself.

DRS. WELCH and TYSON, in the discussion, dwelt upon the conditions necessary to establish the causal relation of germs and disease.

DR. JAMES C. WILSON read an elaborate paper on the *Prophylaxis of Tuberculosis*.

DR. HENICK, in the discussion, still doubted that positive proof of the contagiousness of tuberculosis had been presented.

DRS. CUTTER and WHITNEY entered into the discussion in the same spirit.

DR. COHEN was very happy in his remarks, occupying a middle position between those of Dr. Wilson, who ably defended his position in the concluding remarks.

DR. M. R. CRAIN presented a paper entitled *Toxic Agents in the Blood as a Cause of Diseases of the Nervous System*.

DR. W. L. SCHENCK offered *Some Thoughts on the Etiology, Pathology and Therapeutics of Phthisis Pulmonalis*.

DR. SOLOMON SOLIS-COHEN, of Philadelphia, read an excellent paper entitled *Food in the Treatment of Consumption*.

DRS. E. and J. A. CUTTER followed with an essay on *Trophopathy in the Fatty and Fibroid Degenerations: with Presentation of Case of Cure*.

Section on Obstetrics and Diseases of Women.

FIRST DAY, JUNE 25, 1889.

DR. HORATIO R. STORER, of Newport, R. I., read a paper on *The Medals of Benjamin Rush, Obstetrician*.

Dr. Storer's paper calls forcible attention to the fact, that to Dr. Rush was owing the first suggestion, or rather prophecy, of obstetrical anæsthesia. He quotes various passages from Rush's work, which demonstrate that "he was, throughout, a skilful obstetrician. In the very title of one of his papers, he closely associates the pains of labor with its dangers, he announces that they can both be lessened, he recognizes that they are the potent cause of subsequent disease, and he teaches its prevention."

Dr. Storer particularly calls attention to the following passage of Rush: "I have expressed a hope in another place that a medicine would be discovered that should suspend sensibility altogether, and leave irritability, or the power of motion, unimpaired, and thereby destroy labor-pains altogether."¹

The importance of this extraordinary interesting passage seems to have been recognized only by Channing, Gaillard Thomas, and Faget, of New Orleans. It was lost sight of entirely through the ether-chloroform controversy. Dr. Storer after exhaustive research, in which he has been aided by Dr. Toner, of Washington, fails to find other reference to it, and in this impression he is coincided with by Drs. Mundé, Chadwick, and Gaillard Thomas, to whom he had appealed as probably most familiar with modern obstetric literature.

Dr. Storer exhibited enlarged photographs of the two extremely rare medals of Rush, which are in his collection, and expressed the hope that they would be found of use in giving the correct features of the "American Sydenham" when his monument, undertaken by the Association, shall be raised, and that the paper itself might tend towards a better appreciation of the true merits of the man himself.

DR. W. W. POTTER, of Buffalo, N. Y., then read a practical paper on *Note on the Uses of Boric Acid in Gynæcic Practice*.

(See page 46.)

The next paper, by DR. HENRY O. MARCY, of Boston, on *The Inversion of the Uterus: Reduction by a New Method*, and the exhibition of instrument, was one of great interest and brought out a very complimentary discussion by Drs. Clark of Cambridge, Lusk and Cleveland of New York. This paper will be published in the next issue of THE JOURNAL.

DR. JOSEPH PRICE, of Philadelphia, read a paper entitled, *Series of Five Hundred Confinements in a Maternity*. Dr. Price described briefly the Maternity Retreat of Philadelphia, in which such brilliant results are made possible by the absolute system of cleanliness prevailing at that institution. As this excellent paper as a whole was but a brief summary of much labor, the reader must be referred to the paper itself as it appears subsequently in full in these columns.

This paper was discussed by Dr. Thomas Opie, of Baltimore, Prof. Lusk, of New York, and others, all agreeing in the main with the writer, and emphasizing strict antiseptic methods as a requirement of success in obstetrics.

DR. HENRY D. FRY, of Washington, read the next paper, his subject being: *The Application of Forceps to Transverse and Oblique Positions of the Head: Description of a New Forceps*.

The author advised strongly the application always of the obstetrical forceps to the biparietal diameter of the head without regard to its position in the pelvis, and presented forceps the construction of which makes it practicable to apply the instrument to the transverse or oblique position of the head.

Before the discussion was opened on the above paper another paper was read by Dr. W. S. STREW-

¹ "Medical Inquiries and Observations," 3d edition, iv, p. 376.

ART, of Philadelphia, on *When should the Obstetric Forceps be Used and what Form of Instrument is Required?* A new forcep was presented by Dr. Stewart in which was involved the principle by which either blade may be applied first.

Dr. JOSEPH TABER JOHNSON, of Washington, opened the discussion. He said that Dr. Fry's paper had interested him very much, and although he had had no experience in the use of his forceps, he certainly should avail himself of the first opportunity presented to do so.

Dr. PARVIN, of Philadelphia, said that the instrument of Dr. Fry's for transverse and oblique positions was the revival of an old instrument, and he predicted that the result would be short-lived in the present case. He objected to Dr. Stewart's forceps because of the length and complication of the handles.

Dr. JOSEPH PRICE objected to Dr. Fry's forceps because he was sure that dangerous compression of the neck of the child would result from its use.

Dr. THOMAS OPIE, of Baltimore, then read a paper on *The Obstetrician as a Counselor*.

SECOND DAY, JUNE 26, 1889.

The following officers were elected for the ensuing year: Dr. W. W. Potter, of Buffalo, President, and Dr. Hoffman, of Philadelphia, Secretary.

The Address of the Chairman, Dr. WATHEN, of Louisville, was on the *Pathology of Ectopic Pregnancy and Pelvic Hæmatocele*.

He referred to the fact that nearly everything written on ectopic pregnancy prior to 1880 is of no real value. He treated his subject in the following order:

1. The ovum is never impregnated in the uterine cavity, and the conjugation of the male and female elements must take place before or just after the ovum enters the tube.

2. Ectopic pregnancy is always primarily tubal, with the possible exception of ovarian pregnancy. The tube usually ruptures before the fourteenth week into the folds of the broad ligament, or into the peritoneum.

3. Abdominal pregnancy cannot occur except as a result of primary or secondary rupture, and if the villous or placental attachments are destroyed the ovum immediately dies, because it cannot form secondary attachments to other structures.

4. If, in ruptures into the peritoneum, the ovum retains villous or placental attachments, it may be possible, under certain conditions, for the pregnancy to continue, though not probable. If the amnion is ruptured in the early months the embryo will die.

5. So-called interstitial pregnancy does not always rupture into the peritoneum; it usually does.

6. If we define pelvic hæmatocele as an encysted or confined tumor formed of blood, then intraperitoneal hæmatocele is not possible.

He treated the subject in detail, and gave many valuable facts in proof of the above propositions. In a general sense, he accepted the conclusions of Mr. Tait, but he differed with him in his belief that in normal pregnancy the male and female elements meet in the uterus, and that, in a healthy condition of the tubes, the spermatozooids cannot pass out to the ovaries. He claimed that the ciliated epithelium has no influence on the movements of the spermatozooids, but that they move by an inherent force, and may reach the ovaries through a healthy or a diseased opening. In his argument that primary abdominal pregnancy is impossible he says: "The ovum cannot form villous attachments until it is held immovably in the maternal structures, and this is not possible except in the tube or uterus. If the ovum fails to enter the tube it will soon perish in the abdominal cavity, for it cannot fix itself to the peritoneum, as this and surrounding structures are in nearly constant motion." He did not believe it has been positively proven that any of the specimens were ovarian pregnancy, for this could not be done except by a thorough microscopical examination of all parts of the gestation sac and the demonstration of a general distribution of ovarian stroma. The address was in every way creditable to its author, and the Section voted him a unanimous vote of thanks.

A paper was read by Dr. THEOPHILUS PARVIN, of Philadelphia, on *Casistry in Obstetrics*, which will appear in full in THE JOURNAL.

Dr. A. VAN DER VEER, of Albany, N. Y., read a paper on *Concealed Pregnancy, its Relation to Abdominal Surgery*.

This paper was based upon the study of seventy cases of abdominal section wherein pregnancy existed as an undiagnosed complication. A diligent effort had been made to obtain full histories of cases, and many prominent operators from all portions of the world had made contributions. Two complete tables were given, being twenty-six cases were pregnancy existed with fibroid, ten cases simple pregnancy, five cases in which the pregnancy existed in a rudimentary form of a bi-cornate uterus, and twenty-nine cases in which simple ovarian cyst alone existed. In the majority of the cases no symptoms of pregnancy are noted. Rapid growth and changes in the consistency of the tumor in fibroids was observed in nearly all of the cases. The physical signs of pregnancy, prior to the fourth month, may be either obscured or concealed by the presence of a fibromyxoma. Hydramnion as a complication of pregnancy led to abdominal section twice. It was clearly shown that the statement of unmarried women with abdominal enlargements must not be relied upon. The paper is certainly a valuable one upon this subject, and the conclusions to the point. Namely, That the probable diagnosis should be based upon the

physical signs contained in the notes of the case by the rational signs contained in the clinical history, and not by simple abdominal palpation, and the dim light of a pelvic examination. That whenever the slightest probability of pregnancy exists it should be fully explained to the patient and to her friends. That the necessity for operative relief, and the consequences of delay, or neglect, should be carefully stated to the parties interested before obtaining their formal consent to the operation. That it is the duty of every operator to report fully all such cases, that the methods of diagnosis may be improved if possible. That it is the duty of the profession at large to maintain that pregnancy may be absolutely concealed, especially prior to the fourth or fifth month, by other intra-abdominal conditions.

DR. W. H. PARRISH, of Philadelphia, read a paper on *Pelvic Abscess in the Female*, which will be published in full.

DR. JOS. TABER JOHNSON, of Washington, D. C., read a paper upon *Tetanus following Ovariectomy*. The Dr. gave the history of the case which formed the basis of his paper, she being a lady over 60 years of age, from whom he removed a sarcomatous tumor of the left ovary the size of a child's head. Patient convalesced unusually well for twelve days, when tetanus set in and she died three days later of lock jaw. Of this very rare complication of ovariectomy Dr. J. had collected from publications about fifteen cases, including ten cases collected by Dr. Parvin in 1877.

The infectious nature of the disease was discussed, and instances narrated where it had been communicated from animals, especially horses, to man.

The tetanus bacillus was shown to be the same in animals and in the human family, and the workers in abdominal surgery were warned against the possible contamination of their cases by the contagium emanating from tetanus, cases originating in either human or animal sources.

In the discussion Dr. Polk, of New York, complimented Dr. Johnson upon the practical value of his paper, and thought the warning against this new and, to many, unknown danger, a very timely and important one.

A paper was then read by DR. A. REEVES JACKSON, of Chicago, on *Injuries to the Bladder During Laparotomy*. Dr. Jackson's report included sixty-seven cases of injuries to the bladder gathered from the profession at large by means of a circular letter. The paper contained many valuable suggestions, which will appear in full when the paper is published in THE JOURNAL.

After Dr. Jackson's paper was read the discussion of all the papers of the afternoon took place, in which Drs. Polk, of New York, Joseph Price, of Philadelphia, Gordon, of Portland, Me., Baldy and Hoffman, of Philadelphia, and Dudley, of New York, took an active part.

The proceedings of the third day included a paper by Dr. A. B. Carpenter, of Cleveland, O., on *Alexander's Operation; with a New Method of Securing the Round Ligaments*; and one by Dr. Augustus P. Clarke, of Cambridge, Mass., on *Chronic Cystitis in the Female*.

Surgery and Anatomy.

FIRST DAY, JUNE 25, 1889.

DR. N. P. DANDRIDGE, of Cincinnati, Chairman, of the Section, delivered an address on *Surgical Interference in Fractures of the Spine*.

(See page 37.)

The discussion was opened by DR. WM. H. PANCOAST, of Philadelphia, who cited several cases similar to those given in the paper, and reported post-mortems on hanged criminals whose death was caused by shock and not by fracture or dislocation of cervical vertebræ. In one criminal a vertebra was broken but not displaced.

In the absence of Dr. W. W. Keen, of Philadelphia, the paper on *Surgery of the Lateral Ventricles of the Brain* was omitted.

DR. H. H. SMITH, of Philadelphia, read a paper on *Concussion of the Spine in its Medico-Legal Aspect*. He said a medical man should not act both as medical expert and medical adviser for any corporation, and gave forty-nine cases of concussion of spine or "railway spine," of which thirty-six were real or probable deceptions; mostly cases of simulation and one case of substitution.

1. Can any force be so supplied as to cause real concussion of spinal cord? Yes, but it is not a common occurrence.

2. How are the normal functions of the cord disturbed by such injuries?

a. Anæsthesia, hyperæsthesia, etc.; b. Motor disturbances; c. Vaso-motor disturbances; d. atrophic changes.

3. Pathological changes.

If the disturbance is functional it may be cured. Neurasthenia can produce all the symptoms usually attributed to concussion. Molecular changes may be produced by severe shaking of cord without any injury to the canal. Injury to cord in any accident is followed very quickly by the symptoms, and we must look with suspicion upon cases where spinal symptoms are not developed for several weeks or months.

Conclusions: 1. Concussion of the spinal cord is no longer a matter of doubt. 2. Pathological changes noted in the molecular condition may be due to other causes. 3. There is a possibility of preëxisting spinal disease. Therefore, *no physician* should go into court and swear that a man has spinal concussion due to a certain injury and permanent.

DR. HERBERT JUDD, of Galesburg, Ill., read a

twenty-five minute paper in which he set forth the same general conclusions as Dr. Smith.

DR. WM. BRODIE, of Detroit, Mich., cited two cases, in one of which his testimony was for the plaintiff; in the other, against. The jury gave the plaintiff heavy damages in both cases. Conclusions: Immediately after a man is hurt the railroad surgeon should advise the company to settle.

DR. B. A. WATSON, of Jersey City, N. J.: Spinal concussions are not so frequent as would seem from court decisions. I have observed as the most frequent injuries following railroad accidents: 1. Hæmorrhagic infarction in lungs. 2. Lacerations of liver, spleen, lungs or kidneys. 3. Rupture of blood-vessels and bladder.

DR. C. B. PENROSE, of Philadelphia, being absent, the Secretary read a paper in consonance with the preceding discussion.

DR. J. H. MURPHY, of St. Paul, Minn., said: Erichson has cost the railroads thousands of dollars. He cited several cases of malingering.

DR. WM. H. PANCOAST, of Philadelphia, said: The question under discussion has two heads: 1. Is there such an injury as spinal concussion? 2. Are there malingerers who assume the symptoms? He discussed clearly these two questions, ending with the conclusion that many railroad injuries can be adjudicated, and the real sufferers properly compensated, by the judicious surgeon acting as the mediator between the opposing lawyers to the honorable satisfaction of both parties.

DR. MAURICE RICHARDSON, of Boston, read a paper on *Surgery of the Peripheral Nerves*, illustrated by black-board drawing. He said: Nerve-tomy is the proper treatment for wryneck, and gave new landmarks for reaching the spinal accessory by making an incision on the anterior border of mastoid parallel with course of muscle. In cases of nerve suture he had used both catgut and silk, but prefers silk if it is aseptic. In most cases there is return of motion and sensation; in no case has healing by first intention been observed. Many interesting cases cited, most of which were successful.

DR. WM. H. PANCOAST, of Philadelphia, made a spirited speech, claiming the honor of the first neurotomy of the fifth pair of nerves for his distinguished father.

Drs. Dever, of Philadelphia; W. O. Roberts, the Secretary of Section; S. C. Gordon, of Portland, Me.; and Burns, of Philadelphia, followed in the discussion, all citing cases from their practice in consonance with the ideas of Dr. Richardson.

Drs. C. C. Hunt, Dixon, Ill., and E. H. Bradford, Boston were absent.

Dr. Carpenter's paper on *Pathology and Treatment of Chronic Sciatica*, was deferred till the second day,

SECOND DAY, JUNE 26.

DR. C. B. PORTER, of Boston, read a paper on *Ectroversion of the Bladder*.

He said: Whatever operation is chosen the free exit of the urine is necessary to success. A case was exhibited. Girl, æt. 8 years, had complete ectroversion; congenital gap at symphysis pubis 3 inches; mucous membrane of bladder and vagina freely exposed to air and friction of clothing; suffering and uncleanness extreme. Operation Jan. 11, 1889, consisted in making large pear-shaped flap, hinged at mons veneris, and extending to umbilicus. This flap was turned down, covering in the bladder, with the skin surface making the anterior wall of bladder. The external raw surface of the flap was covered by two half-size flaps cut from the inguinal region and turned around toward the median line. The surface exposed on anterior aspect of abdomen was drawn together by sutures; the other two surfaces healed by granulation. A hot dressing was applied. Three months after the operation the girl joined her playmates, relieved of all pain and wearing a shield between the legs. There is always incontinence of urine in these cases.

In the absence of the author, DR. C. C. HUNT, of Dixon, Ill., the paper on *Suspension and Extension in Treatment of Sciatica*, was read by title.

DR. W. T. BRIGGS, of Nashville, Tennessee, read a paper on *The Choice of Operations for the Removal of Urinary Calculus*. He said: In children under 16, the cutting operation should by all means be chosen; after puberty, litholapaxy. In old age mortality is greater in both operations, but crushing in the hands of a skilful operator is better. The composition of the calculus is important. Large uric acid calculi, or oxalic calculi are hard to crush, and better be cut for. Stones return with less frequency after litholapaxy. The size and toleration of the urethra are important factors. Lithotomy should be chosen in the following cases: 1. Children; 2. Large and hard stone; 3. Encysted stone; 4. Indurated and crooked urethra; 5. Prostatic enlargement; 6. Prostatic overgrowth; 7. Prostatic enlargement with putrid urine; 8. Tumor of bladder; 9. Chronic cystitis.

Litholapaxy should be chosen: 1. For adults; 2. In cases of soft stones; 3. Where urethra is of good calibre and tolerant. The supra-pubic lithotomy may be performed in cases where stone is too hard to be crushed, and too large for perineum. The raphe is nature's field for incision, and the medio-lateral incision is almost devoid of any danger to life. He reported 186 cases in his practice with three deaths.

DR. A. T. CABOT, of Boston, read a paper on *The Choice of Operations for Stone in the Bladder*. The best operation is the one which is followed by the fewest deaths; provided there is

no permanent disability. The statistics of recent years make litholapaxy and perineal lithotomy of equal value for children. During adult life litholapaxy is rather safer than perineal lithotomy and in old age it is much safer. In all cases supra-pubic lithotomy should be resorted to last, for its death-rate is from three to six times as great as either of the others. He reported forty-seven cases: Litholapaxy forty-two, deaths two; lithotomy four, deaths one; supra-pubic lithotomy one, death one.

DR. DUDLEY ALLEN, of Cleveland, Ohio, read a paper on *Litholapaxy in Children*. Dr. Allen thinks litholapaxy is better because the public is not afraid of it. They delay the cutting operation too long often. After litholapaxy the patient is confined to his bed 5.7 days, after lithotomy 17.6 days. The return of stone is no more frequent in litholapaxy than in lithotomy. If stone returns, the patient will, as a precaution wash the bladder for several days after the operation.

DR. J. W. S. GOULEY, of New York, read a paper on *The Choice of Treatment of Urinary Concretions*. He said: Lithotripsy at several short sittings without anaesthesia is devoid of the often serious complication of ether-nephritis; it does not incapacitate the patient from work during treatment. It is never followed by traumatic acute cystitis, and there is no greater tendency for return of the stone. However, the proper choice of treatment of urinary calculus can only be made after a careful study of the case.

SIR JAMES GRANT, of Ontario, said that as far as his experience went he much preferred lateral lithotomy, and spoke in very complimentary terms of the advances in surgery made by the surgeons of the United States.

DR. TREMANE said that suprapubic lithotomy is an American operation. He has performed perineal lithotomy on eighteen persons in boyhood. They grew up around him, all of them got married, and but one of them had children. This is significant. Sir Henry Thompson agrees with him that after 5 years the suprapubic operation is free of most of the disadvantages of perineal lithotomy.

DR. W. H. PANCOAST, of Philadelphia, urged the importance of recognizing the difference of irritability of the bladder; the extreme irritability of some bladders making lithotripsy and litholapaxy dangerous in those patients.

DR. R. T. MORRIS, of New York, read a paper on *What Dressing Shall Lie Next to the Wound?* He recommends, in fresh wounds, the use of Lister's protective oiled-silk. On a large granulating surface use peroxide of hydrogen freely to make the wound and the adjacent parts aseptic, cover with oiled-silk, apply dry, absorbent dressing that may remain from one to four weeks. Whether bichloride gauze is used or absorbent cotton is immaterial.

DR. H. O. MARCY, of Boston, said he agreed with Dr. Morris in his treatment of granulating wounds, but in fresh incised wounds he uses no dressing, simply drying the surface and painting with iodoform collodion.

DR. W. H. PANCOAST, of Philadelphia, reported the very successful use of iron-dyed silk both as dressing and as sutures.

Drs. M. A. Crain, of Rutland, Vt., I. N. Quimby, of Jersey City, N. J., and Thos. H. Manley, of New York, continued the discussion.

DR. J. C. WARREN, of Boston, read a paper on the *Management and Treatment of Large Hernia*.

He had used on a very large scrotal hernia a bag with inelastic exterior and elastic lining. Inflating space between bag and its lining by means of a fountain syringe, a steady pressure was produced upon all surfaces of the hernia except the pedicle. The result was successful. In old men who fear a cutting operation, an inelastic suspensory bandage has been used successfully. He concluded by advising the gradual reduction of a hernia by pressure of air, water or rubber. It is not a new treatment, but its value is not generally recognized.

DR. H. O. MARCY, of Boston, read a paper on *Radical Cure of a Hernia by use of the Aseptic Animal Suture*.

He reported fourteen cases, exhibiting the hernia sacs removed, stuffed with cotton and preserved in alcohol. The requirements of the operation are: Dissect out sac, reduce gut and omentum, draw down sac, ligate it, the ligated neck retracts within the internal ring. Use animal sutures in such a way as to *make the canal oblique*. The obliquity of the canal is of great importance; it is nature's safety valve—the greater the internal pressure, the tighter the valve. Close the external wound with deep sutures (animal) without drainage and dress with iodoform collodion. Catgut sutures and ligatures may be used, but the tendon suture is his choice.

DR. WARREN, of Boston, does not believe in animal sutures. Uses silk or linen, and places them in such a way as to make a knuckle of peritoneum over the internal ring.

DR. J. B. DEEVER, of Philadelphia, read a paper on *The Radical Cure of Hernia*.

He reported several cases. One case complicated with vesicle hernia, where the bladder was mistaken for a second hernia sac containing a loop of intestines. It was ligated and resected. Within 24 hours the patient died in collapse, the ligated bladder having escaped from the ligature and the urine and blood passed into the abdominal cavity.

DR. C. W. DULLES, of Philadelphia, read a paper on *Properitoneal Hernia*.

The paper showed wide research, and the author made a new classification of this rare form of hernia.

A general informal discussion then ensued on the subject of *Treatment of Hernia*. The following members took part: Drs. T. H. Manley, of New York City; Dudley Allen, Cleveland, O.; E. W. Cushing, Boston; A. P. Clark, Cambridge, Mass.; H. J. Herrick, Cleveland, O.; W. H. Long, United States Marine Hospital, Cleveland, O.; R. T. Morris, New York City.; L. W. Steinbach, Philadelphia; W. H. Pancoast, Philadelphia; Murphy, St. Paul, Minn.; H. D. Didama, Syracuse, N. Y.

THIRD DAY, JUNE 27.

DR. THOMAS S. K. MORTON, of Philadelphia, read a paper entitled *Some Further Considerations and Statistics of Abdominal Sections for Traumatism*.

He said severe abdominal injuries may exist without shock. Emphysema around a wound is not conclusive evidence that the intestine is wounded. A sufficient indication for laparotomy is the presence of a wound perforating the abdominal wall. Shock is a contra-indication unless it be from hæmorrhage. The earliest possible moment after the injury should be chosen for the operation. The incision should be median always, unless the injury be very far from median line, and the failure to readily find or repair the internal wound should drive the operator immediately to the median line.

Wounds of the kidneys, liver and spleen should be drained—a small glass tube is best. The stomach should be washed out to avoid vomiting. Rectal alimentation when the alimentary tract has been wounded, unless that wound be in the rectum itself. Though he could not concede to hydrogen gas all that has been claimed for it, he could claim something new for it—its injection into the bladder to discover wounds in the walls of that viscus. When we find that thirty-six deaths have occurred, in the number reported to him from *delay*, we ought to take that as a pertinent suggestion.

DR. J. W. PRICE, of Philadelphia, read a paper on *Pelvic Surgery by Abdominal Section; its Past, Present and Future*.

He said: Aseptic surgery may be obtained without the introduction of chemical antiseptics into the wound. Cleanliness, water and neat surgery are the best antiseptics. In incipient peritonitis use saline cathartics. Begin operative procedure early. Procrastination is not only the thief of time, he is the servant of death. Gonorrhœa may be the cause in a woman of one of the most serious pelvic diseases—pyosalpinx. He doubts that electricity in treatment of pelvic disorders has the value that is claimed for it.

DR. J. M. BALDY, of Philadelphia, read a paper on *Peritonitis*.

He said: That peritonitis is idiopathic and a distinct disease, is denied by many. He had

never seen a case where a cause could not be found. This being the case narcotics are not indicated in its treatment, except sufficient anodyne to take the edge off the pain. The paramount indications for treatment are: First, drainage, and second, depletion, both of which may, in many cases, be effected through the alimentary canal by saline cathartics. Magnesium sulphate $\bar{3}ij$ to $\bar{5}j$ to get twelve or fifteen profuse watery stools. Salines cannot be indiscriminately used. Study the case. Some require surgical interference. In treatment by purgation, the prognosis can be made in 48 hours, and surgical procedure instituted in some cases. Chronic peritonitis can be best treated by the surgeon even when the disease is tubercular.

The paper by DR. CHAS. B. PENROSE, of Philadelphia, on *Drainage in Abdominal Surgery*, was read by title.

The paper by DR. M. PRICE, of Philadelphia, on *A Plea for Early Abdominal Work*, was read by title.

DR. N. B. CARSON, of St. Louis, read a paper on *Chylous Cyst of Mesentery with Report of a Case*.

He reported a case, an interesting one, which was diagnosed by palpitation and aspiration. Operation: Incision, drainage, dressing, iodoform gauze; result, perfect. Origin of chylous cysts: 1. Thoracic Duct. 2. Receptaculum chyli. 3. Mesenteric glands. Of seven cases reported, one died. He advises operation as soon as the tumor inconveniences the patient.

The following members took part in the interesting discussion: Conservative—Drs. E. Griswold, Sharon, Penn.; Quimby, Jersey City; and Lee, of Chicago. Radical—Drs. R. T. Morris, Steven Smith, and T. H. Manley, of New York; and J. B. Deaver, of Philadelphia.

DR. ADDINELL HEWSON, of Philadelphia, read a lengthy and amusing paper on *The Use 25 Years Ago of Polarity for Locating the Whereabouts of a Lead Bullet Deeply Imbedded in the Body*.

DR. THOS. H. MANLEY, of New York, reported *A Unique Case of Fractured Exostoses of the Pubis*.

Diagnosis obscure, abscess found pointing in Scarpa's triangle. No apparent cause, pus fetid. Operation: Incision and drainage, with exploration for offending object. Post mortem discovered upon the brim of the pelvis an exostoses which had become dislodged from its connection with the pubis, thus becoming a foreign body and the origin of the abscess, which was a multilocular one, and extended from the popliteal space to the origin of the psoas muscles. The form of the exostosis suggests that it is a reduplication of the pubic bone. The pyogenic membrane was very dense and effectually protected the system from sepsis. If we had not operated the case might have spontaneously terminated favorably.

DR. ROBT. NEWMAN, of New York, read a

paper on *Electrolysis in the Treatment of Stricture of the Rectum*.

He cited a number of cases which were cured or improved. Conclusions: 1. Electrolysis in the treatment of stricture is not a panacea, and it will probably fail if the stricture is due to carcinoma. 2. Electrolysis will give improvement in rectal strictures where other methods have failed. 3. Electrolysis cures a certain class of cases better than other methods. 4. There is the best chance of a cure in a fibroid stricture. 5. Use a metal bulb with flexible stalk.

FOURTH DAY, JUNE 28.

DR. CHAS. DENISON, of Denver, presented *A New Rib Cutter and a Case of Resection of Ribs for Drainage of a Pulmonary Cavity*.

He reported a case of pulmonary abscess, associated with tubercular infection, opening interiorly and discharging $1\frac{1}{2}$ pints of pus daily. Operation: Resection and incision. Treatment: Drainage, injection of an antiseptic wash and dressing, after filling the abscess cavity with salol solution 10 per cent in liquid vaseline. Result: After a few months patient returned to hotel clerkship at a high altitude in mountains, feeling well and weight increasing. Abscess cavity much decreased in size.

He exhibited a new and ingenious instrument, of his own invention, which combines a periosteum lifter and a rib cutter, works easily and quickly, cuts a smooth surface and is not costly.

DR. J. O. WHITNEY, of Pawtucket, R. I., said: Empyema and pulmonary abscess are to be treated on the general principles which have governed them for years: Drain, but, as a rule, do not inject disinfectants.

Discussion was continued by Drs. S. H. Weeks, of Portland, Me., and J. L. McComas, of Oakland, Me.

DR. J. B. HOPKINS, of Philadelphia, read a paper on *The Absorption of Dead Bone*.

He gave a history of several experiments in which dowels of sterilized dead bone were driven into holes drilled in dog femurs. The dogs were subsequently killed at varying lengths of time after the operation, and the gross and microscopic appearances studied.

The following conclusions were reached: 1. When sterilized dead bone is placed in close contact with the living bone, it will undergo absorption or organization. 2. The process goes on most rapidly during the period between the third and eighth weeks. 3. When sterilized dowels of dead bone are used for mechanical service they may be relied upon for four to six weeks.

Discussion followed by Drs. Quinby, of Jersey City; J. O. Whitney, of Pawtucket, R. I.; and J. L. McComas, of Oakland, Me.

DR. J. G. CARPENTER, of Stanford, Ky., read a paper on *Pathology and Treatment of Chronic Sciatica*.

The author believes in trying medicinal agents first and resorting at last, in case of their failure, to surgical interference in the form of nerve stretching. The after treatment consists in keeping the limb stretched for a few days, followed by extension by means of splints or plaster of Paris boot for three to six weeks. The limb should be bandaged to obviate swelling.

A paper on *The After Treatment in Cases of Abdominal Section* by DR. L. S. MCMURTRY, of Louisville, Ky., was read by title.

A paper on *Cranial Surgery*, by DR. H. O. WALKER, of Detroit, Mich., was read by title.

An abstract of the paper on *The Surgery of the Spine*, by DR. J. W. WHITE, of Philadelphia, was read by the secretary. Spinal trouble which may necessitate surgical interference: 1. Traumatism. 2. Caries. 3. Neoplasms. It is customary and proper in deciding upon any serious surgical procedure, involving risk to life, to consider well the prospects of the patient in the event of non-interference, and to be largely influenced by them. This principle is eminently applicable in cases of spinal surgery.

Section on State Medicine.

FIRST DAY, JUNE 25.

The first paper read was on the subject of *International Comity in State Medicine*, by Dr. John B. Hamilton, Surgeon-General U. S. M. H. S. Dr. Hamilton took as his text a portion of the resolutions recently adopted at the last Quarantine Convention held in this country, viz: the one in Montgomery, Alabama. The portion referred to reads as follows: "Resolved that this Conference is of opinion that it is a duty devolving on all nations, to take measures to eradicate any plague centre from their territory, and that the existence of plague centres is a menace to all other nations, and that our State Department be requested to take measures through proper diplomatic channels, for the conveyance of this opinion to the Governments deemed obnoxious to the opinion as herein expressed."

Dr. Hamilton made a strong plea for the extension of such action, and at the close of his paper, upon motion it was resolved that the resolution of the Montgomery Sanitary Association be adopted and transmitted to the general body of the Association.

DR. W. C. RIVES, of New York, read a paper on *The Importance and Essential Needs of Local Boards of Health*. This paper was an admirable plea for the extension of efficient sanitation, by means of local boards of health.

DR. HIBBARD, of Indiana, remarked that there is always a temptation to lay out too extensive a programme, and thus defeat the object arrived at. Action in the direction suggested should be con-

formable to and commensurate with the environments and conditions present.

DR. SMART, U. S. A., added but a word to the discussion, saying that he believed in the utmost energy.

DR. MORRIS, of Baltimore, referred to the Sanitary Association of Newport, which comprises such able sanitarians, and which yet permitted the existence of unsanitary closets in public places. For his part he is greatly interested in good plumbing everywhere.

DR. STORER, of Newport, arose to explain that while the Association was aware of the conditions referred to, it found some of them nevertheless, beyond their jurisdiction.

DR. N. S. DAVIS, of Chicago, read a paper on *The American Medical Association and its Relations to Public Health*.

The reader pointed out the work done by the Association since its inception. It began with the matter of the registration of vital statistics shortly after the founding of the Association. Next the adulteration of drugs received their attention. In both directions they succeeded in procuring valuable legislation. Later on, drainage, street cleaning, water supply, the use of disinfectants, and the effects of tea and coffee in children, all received their attention. Next they took up the study of epidemics. In 1850 a report was made on sources of typhus fever, with the necessary remedies. Valuable reports were also made on the subject of cholera. In 1851 the States were divided into eight groups, and in 1852 reports on epidemics were received from the groups. The sanitation of ships also received attention. Up to 1859, indeed the reports of the Association on the various subjects of sanitation and State Medicine, were most extensive, the reader himself being amazed to find that they formed nearly one-third of the bulk of the transactions during the years included. In 1859, at Dr. Lindsley's suggestion, five Sections were established, from one of which arose the Section of State Medicine of to-day. From 1847 to 1882, we find in the Transactions of the Association the very best record of epidemic diseases to be found. The influence of the Association was reflected upon the State and local societies, and it even led to the formation of new organizations, especially State and local boards of health. To-day we have in THE JOURNAL a most valuable agency for the propagation of the work that has been so well done by the Association.

DR. MORRIS, of Baltimore, took exception to the claims of Dr. Davis for the Association as the chief agent in securing the reform alluded to. He finds in the Association comparatively few active sanitarians, whereas in the American Public Health Association they have not only medical sanitarians but also architects and engineers.

DR. SMART, U. S. A., rose to say that Dr.

Davis claims that this Association is the father of the latter, and therefore entitled to credit for the deeds of the son.

DR. LINDSLEY, of Ohio, regretted that the Association had not of late years maintained the reputation which it had established so many years ago in the field of sanitation.

GEO. E. WARING, Esq., of Newport, read a paper on *Modern Sanitary Conditions*.

Mr. Waring felt confident that, by improved sanitary measures, the death-rate in cities could easily be reduced from 18 to 12 per mil., or, in other words, 365,000 lives could annually be saved. To accomplish this it is necessary to remove the organic waste of life before putrefaction occurs. This involves merely matters of drainage, garbage removal, improvement in water supply and increase of elevation.

DR. BAKER, of Lansing, Mich., said that there were diseases that could not be stopped by improved sewage and water supply. These diseases, such as scarlet fever, diphtheria and small-pox, are to be dealt with by legislation and disinfection. By these means it will be possible to reduce the death-rate even below Mr. Waring's limit.

DR. HIBBARD, of Indiana, thought that both methods should go hand in hand, for it is impossible to secure disinfection without engineering.

(To be concluded.)

FOREIGN CORRESPONDENCE.

LETTER FROM CAIRO, EGYPT.

*The Sanitary Condition of India and its Teachings.*¹

In our last article we gave an account by an eye witness of the normal sanitary condition of a native hamlet in the suburbs of Calcutta, while no epidemic was raging. We now propose to lay before our readers an account of a visit, in December, 1887, to an Indian cholera stricken village also in the suburbs of Calcutta, in order that we may profit by the lessons taught us by the sad narrative. The epidemic here described is only part of that cholera epidemic, which has been spreading over the length and breadth of India since last year, and which is now raging in all its intensity in the Punjab. As all our readers know, India is the hot-bed of cholera, where it is always present in its endemic form, and where every three or four years it assumes an epidemic character, when it threatens to spread not only over India, but to every part having communication with that country. The destroying angel passing over the land of the Pharaohs and smiting the first-born in every Egyptian household, cannot have produced a more heart-rending

¹ Written for the "Arabie Medical Journal" and communicated to us through Dr. Joseph Jones, of New Orleans, La.

scene than the one now presented, on a smaller scale at Hathibagan, a suburban village, not more than a quarter of a mile from the centre of Calcutta. There within an area of small compass, more than twenty families, are each bewailing the death of some member or members of their family. The sound of the dirge and lament is heard at nearly every door, for within the last few days cholera has visited house after house, carrying with it sorrow and ruin, and panic. People are hurrying their dead to the burial and burying grounds, while others are fleeing for safety from the place. Among the refugees are not a few who have fled too late, only to be struck down on the roadside. Custom and apathy have so ordered that no pitying eye takes note of these things, no helping hand stretches forth succor to the suffering people in their affliction. Hopelessly left to shift for themselves they die in all the horrors and pangs of a cholera death. But this is not all. The moral insensibility which distinguishes the authorities in their attitude towards the sufferings of the inhabitants is only surpassed in permitting the causes of the pestilence to remain unremoved. The sanitary condition of the village has, out of India, no parallel in the civilized world. There are tanks supplying the inhabitants with drinking water and at the same time receiving the contents of their latrines, ditches full of the blackest and most putrid of mire, the soil soaked with the foulest and most noxious of filth, while the air is laden with impurities and redolent with stinks. Literally the place is a vast cesspool; air, water, soil are alike poisoned. Here the external and most potent causes of disease are in full play and germ, and ghastly indeed are the effects. Cholera, the child of filth, revels in its home, gaining in strength and vitality until conditions arise which shall give an opportunity of leaving its native soil, and visiting other places and countries congenial to its tastes. Doubtless the authorities will declare that the endemic or epidemic is due to seasonal influences, and that the deaths are not more than usual. This apology has ever and at all seasons been a convenient cloak for inaction; but how long is the truth to be suppressed for the ease of the authorities? Seasonal causes are myths of a by-gone day, and must give way to the irresistibly large accumulation of facts which evidence that polluted soil, polluted air, and polluted water, are alone a means of nurturing this fell disease, and that the removal of this pollution is alone the remedy. How long are the inhabitants to be deprived of a pure water-supply, of drainage, and of measures of cleansing, which are among the ordinary necessities of healthy aggregate life? It is idle to speak of the filthy habits of the people when the ordinary means whereby they can be clean are not placed within their reach. If municipal commissioners will not supply these three wants

to their constituents, no amount of education or lecturing will ever effect a change. The change must come over those who are in municipal power—that is from those who are in authority. At the present time the sanitary condition of the suburbs of Calcutta is an outrage on humanity, a satire on civilization, and a disgrace to all concerned.²

The closing words of the above report are even more trenchant than we dare use towards our authorities, how ever much tempted to do so. Now what can we Egyptians learn from this picture of the sanitary condition of our neighbors? What about the air we breathe? What about the soil on which our habitations stand? What about our drinking water supply? True, we have not cholera to deal with, unless when it is imported, but we have other death producing diseases always present, that are equally dependent for their existence and propagation, on what feeds cholera and other contagious diseases. It is not true that the air in and about the majority of our dwellings is pestilential; and have we not evidence enough that the soil is saturated with filth, and is becoming more and more so every day? As to our drinking water: if we have no means of showing the high Nile water, for about three months in the year we have to drink what may be truthfully designated sewage water, while, during the other months of the year the river is only comparatively pure by reason of the abundance of water, which helps to multiply the bad effects of the organic matter thrown into the Nile by the natives, for there is no sacredness attached to it, as gold, whereby it was kept undefiled. We have heard a great deal lately about the excessive death-rate throughout Egypt, but more especially in Cairo, and it may well attract our attention and draw out our concern. What are the best means to be adopted and are they being used? In other departments of the Government service we hear of great projects proposed and attempted at a great cost to the State, but the Public Health of Egypt is, in many respects, like the Public Health of India, left almost out of count, although disease and death threaten the very existence of such a small nation as this is.

India, with its population of 300,000,000, can afford to be well purged of its extra population by keeping up its sanitary condition, but this is not the case with Egypt, which is, at this moment, suffering from scarcity of tillers of the soil. There is no lack of immigrants, but none of them can replace the fellaheen. The cultivation of laborers ought then, one would think, to attract the attention of our political economists a little more, even than the cultivation of cotton and sugar cane. We question very much whether this is the case, but the shoe will pinch more

² "Journal of the Health Society for Calcutta and its suburbs," Vol. iv, Part I, 1888.

tightly some of these days, if some serious, well digested sanitary measures are not speedily adopted and carried out. There is a remarkable similarity between Egypt and India in the sanitary conditions, and in the apathy of the authorities, as to sanitary questions that involve the health and stability of the native population. One has only to walk through our cities and villages to be sensibly assured of the pollution of the air and soil, and in nine cases out of ten, that pollution is far more intense inside the houses of the natives than it is in the streets. Even the European houses are not exempt from unsanitary smells that might easily, by proper ventilation, be carried off and disinfected in the open air before destroying the health of the inmates. We read of the filthy water-supply in India, and of its deleterious effects on those who drink it, and we are not astonished to find that an impure water supply in Egypt is, accompanied by a high death-rate. Just look at those green stagnant pools at low Nile, that surround the Egyptian villages—that receive the filth and washings of the villages, and at the same time serve as a water-supply for man and beast. Can it be wondered at that the native population is dying out by a slow process of blood poisoning? Here there is no lack of polluted air, polluted soil, polluted water supply, and these, combined with the excessive heat of summer, ignorance and crime, make our demographic statistics, simply deplorable. The present sanitary condition of India has been designated an outrage on humanity. This may equally be said of the sanitary state of Egypt.

Surely things are not going to remain as they are. It becomes more and more evident, every day, that a Minister of Public Health is urgently needed in the Council of Ministers. There is no lack of intelligent and well-digested sanitary measures to be carried through, but as they are not immediately remunerative they are pigeon-holed and remain a dead letter! We have raised our feeble voice in the cause of sanitary reform, and we have indicated some of the ways by which the health of the people might be improved. As far as the climate is concerned little requires to be done, as it is so excellent. The heat of summer is, no doubt, some years excessive, and children suffer from the effect it has on their milk food, and many die from summer diarrhoea. This could be controlled somewhat, if the people were less ignorant and knew more about the proper preparation of food for the delicate stomachs of their children. The cold of winter does not last long, so that chest disease is not common among the natives, but we have seen many cases that would have better health if they had more clothing. We consider that a little more education would enable the natives to intelligently combat the evils arising from the climate. We think that

it is the duty of the Government to take the advice of its Sanitary Department as to the laying out of towns and villages, and as to the construction of individual houses, so as to secure pure air for its people to breathe. Many of the wild beasts have better dens to live in than the Egyptians have houses. The honey-comb principle, on which the houses of the villages are built, is entirely wrong. This could be rectified without much trouble, as they are but crude brick huts at best.

The Government is certainly responsible for a pure water-supply for man and beast, all the year round, and it would be wise, in fulfilling this duty, to make arrangements beforehand for carrying off the waste. When that is done, we shall have no more of the green stinking ponds around the native villages. At this moment Cairo is supplied with an abundance of water, but the sewers have been destroyed, so that, unless something is substituted for them soon, we shall have our streets flooded, if nothing worse befall us. We are desirous to see the Public Instruction and Sanitary Department in a more flourishing condition.

J. A. S. GRANT (BEY).

MISCELLANY.

MARRIED, June 26th, at the home of the bride at North Brookfield, N. Y., by Rev. W. T. S. Lumber, Howard F. Hubbard, M.D., of Verona, Oneida Co., N. Y., and Miss Geraldine L., daughter of Gilbert Birdsall, M.D., of North Brookfield, N. Y.

THE BROOKLYN THROAT HOSPITAL was formally opened on the 19th ult.

GEORGIA STATE MEDICAL ASSOCIATION.—At the annual meeting of this Association held at Macon, recently, the following were elected officers for the ensuing year: President, Dr. J. S. B. Holmes, of Rome; First Vice-President, Dr. R. O. Engram, of Montezuma; Second Vice-President, Dr. P. R. Cortelyou, Marietta; Censor, Dr. C. W. Mulligan, of Washington; Orator, Dr. W. F. Westmoreland, of Atlanta.

PERSONAL.—Dr. J. M. Fox, formerly of Troy, N. Y., but now a resident of London and an M.P., will return to this country again and locate either in Albany or New York. Dr. Joseph P. Ross, a well-known physician of Chicago, is seriously indisposed. Cairo, Ill., has erected a handsome monument to the memory of Dr. Roswell Waldo, at Mound City, in recognition of his services in the yellow fever epidemic in 1878.

THE SANITATION OF THE LAUNDRY.—In speaking of this subject *The Lancet*, in the interest of the general public, says: A possible source of danger to health, and one which may, upon occasion, become the centre of incalculable mischief, is the laundry. The absence of any regulating authority, and the lowly condition of many of the proprietors of these establishments, render them particularly liable to faults of management; while the necessity which the dwellers in town are under of giving out their laundry work creates a limitless demand. It becomes, therefore, a matter of importance that from

time to time the warning voice should be raised, and the public put upon their guard respecting the lurking harm. A certain, even a considerable, risk must at the very best attend the institution of a common laundry. No readier method of disseminating the germs of infectious disease could well be devised than by the intermingling of wearing apparel, and where this intermingling takes place the use of antiseptics can afford no more than an untrustworthy and insecure protection from the risks of contamination.

Hence, the very safest plan is to arrange, where possible, for the laundry work to be done at home, and by resident domestic servants. But this is a "counsel of perfection" and can seldom be put into actual practice. The common laundry is a necessity of modern conditions of life, and that being so, the only thing remaining to be done is to turn the force of public opinion in the direction of insisting upon such precautions and safeguards as will minimize its inevitable risks. It is, we fear, an obvious deduction from this principle that the cottager laundress ought hardly to be encouraged. She may be a very worthy person, whose industry and independence we should all respect and strongly desire to support. But, in towus at least, where space is narrow and one's next-door neighbor is unknown, there are serious drawbacks to her position. She is too dependent on the goodwill of her customers to be able to enforce a quarantine of infected linen if it be offered to her, and probably too little acquainted with their domestic affairs to know whether there is or is not ground for suspicion. Hence, housekeepers who take a wise view of their responsibilities will prefer to avail themselves of the facilities and guarantees offered by laundries on a larger scale, where the capital employed suffices to provide adequate accommodation and the scale of the operation enables the managers to exercise a judicious supervision over the work which they undertake, and makes it not only possible, but also commercially necessary, for them to decline such as would involve the risk of introducing contagium to their general stock of clothes. Such laundries are at work, and it is, we hope, a question of time only, and that not a long time, for better and more scientific methods to supersede entirely the dangerous laxity of the washerwoman industry.

THE Medical News says: "The election of Dr. E. M. Moore, of Rochester, for the presidency of the American Medical Association will be regarded throughout the country with universal satisfaction, both for his personal worth and in recognition of his valuable contributions to practical surgery. It is the crowning honor of a long career devoted to the furtherance of the best interests of the profession and to the material advancement of surgical knowledge. Nashville as the place of meeting has the merit of being central and accessible from all directions."

MEDICAL SOCIETY NOTES.—At the one hundred and twenty-third annual meeting of the Medical Society of New Jersey the following officers were elected: President, Dr. B. A. Watson, Jersey City; First Vice-President, Dr. James S. Green, Elizabeth; Second Vice-President, Dr. E. J. Marsh, Patterson; Third Vice-President, Dr. George T. Welch, Keyport; Corresponding Secretary, Dr. William Elmer, Trenton; Recording Secretary, Dr. William Pierson, Orange; Treasurer, Dr. W. W. L. Phillips, Trenton; Standing Committee, Dr. T. J. Smith, Bridgeton; Dr. D. C. English, New Brunswick; and Dr. J. G. Ryerson, Boonton. Essayist for the next meeting, Dr. E. L. B. Godfrey, Camden. The Society will hold its next meeting at Schooley's Mountain.

The Gratiot County, Mich., Medical Society, will hold its annual meeting at Dr. Scott's office, Ithaca, on the 24th inst.

The officers elected by the Toronto (Ont.) Medical Society for the coming year are: President, Dr. A. B. Atherton;

First Vice-President, Dr. B. Spencer; Second Vice-President, Dr. N. A. Powell; Recording Secretary, Dr. G. Acheson; Corresponding Secretary, Dr. W. B. Thistle; Treasurer, Dr. W. J. Greig; Councillors, Drs. J. E. Graham, G. A. Peters, and W. H. B. Aikins.

The Ontario Medical Association have elected the following officers: President, Dr. J. Algeron Temple. Vice-Presidents, First, Dr. Lundy, Preston; Second, Dr. G. Shaw, Hamilton; Third, Dr. K. N. Penwick, Kingston; Fourth, Dr. Hanlep, Wauhashene. General Secretary, Dr. D. J. Gibb Wishart, Toronto. Treasurer, Dr. E. J. Barrick, Toronto. Assistant Secretary, Dr. W. P. Caven, Toronto.

ANENT THE JOURNAL.—The *British Medical Journal* of the 22d ult., in referring to the Newport meeting says: "Owing in great part to the quiet advocacy of the excellent weekly journal which it owns, the American Medical Association has recently been steadily growing in numbers and in influence."

The *Therapeutic Analyst* says: "THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION issued on May 25 an extra edition of 75,000 copies, devoted principally to the interests of the profession in connection with the meeting of the Association at Newport, R. I. This enormous edition was sent out gratuitously to the profession. THE JOURNAL, although always awake to the welfare of the Association, was never more ably edited and judiciously managed than at present."

The *Occidental Medical Times* says: "The Trustees of THE JOURNAL have issued an extra edition of 75,000, which, by good business management, has paid for itself. It contains, amongst other valuable papers, a special article by Dr. Wm. G. Eggleston, on "Our Medical Colleges," that will be read with interest, and should be kept for reference. The full programme of the Association meeting is published, with a description of Newport, handsomely illustrated. THE JOURNAL is steadily gaining in favor with the profession, as the published report of the Trustees will indicate. When it is remembered that any physician belonging to a medical society, in good standing, can, on the payment of \$5, become at once a member of the Association, and receive THE JOURNAL gratis, it is strange that the membership has not increased more rapidly. We hope that this extra edition, which will reach every physician in the United States, will be followed by a large accession."

The *University Medical Magazine* says: "THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for May 25, 1889, of which an edition of 75,000 copies was issued, was in all respects a most acceptable and praiseworthy enterprise. In addition to the strictly scientific matter, and the satisfactory programme of the Fortieth Annual Meeting of the American Medical Association, the most important contribution is the special article from the pen of Dr. Wm. G. Eggleston, of Chicago, on "Our Medical Colleges." Dr. Eggleston is to be congratulated upon the interesting and carefully gathered statistical information which is found in his report, and especially upon the preparation of the table of American Medical Colleges, together with their matriculation and graduation requirements, obligatory practical and laboratory courses, and other information in regard to the methods of instruction and curriculum."

The *Texas Health Journal* says: "An extra edition of 75,000 copies of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION was published on May 25. This was a great enterprise and should be appreciated by the profession of the United States in a substantial manner. The list of Medical Colleges therein contained is of great statistical value."

THE JOURNAL is getting better each year and the medical profession ought to keep the edition standing at 75,000 weekly; this could be done and then there would be about 10,000 physicians without THE JOURNAL."

The *Canadian Practitioner* says: The organ of the

American Medical Association has shown marvellous journalistic enterprise in sending out a special edition of 75,000 copies."

PAMPHLETS RECEIVED.

The Control and Care of Pauper Inebriates of Towns and Cities. By Lewis D. Mason, M.D., Brooklyn, N. Y. (Reprint.)

On the Value of Frequently Repeated Doses of Arsenic in the Treatment of Bullous Diseases of the Skin, especially in Children. By L. Duncan Bulkley, A.M., M.D., New York. (Reprint.)

On Unusual Methods of Acquiring Syphilis, with Reports of Cases. Same author.

The Animal Suture in Intra-Vaginal Plastic Surgery. By Thomas A. Ashby, M.D., Baltimore, Md. (Reprint.)

Is more Conservatism desirable in the Treatment of the Joint Diseases of Children. By A. B. Judson, M.D., New York.

Fourteenth Annual Announcement of Meharry Medical Department Central Tennessee College, Nashville, Tenn.

Announcement of the National Medical College, Medical Department of the Columbian University, Washington, D. C.

Announcement of the Dental Department of Columbian University, Washington, D. C.

Announcement of the Hospital College of Medicine, Louisville, Ky.

Announcement of the Texas Medical College and Hospital, Galveston, Tex.

Announcement of the Woman's Medical College of the New York Infirmary.

Fourth Annual Report of the New York Cancer Hospital.

Stomach Washing in Infants. By A. Seibert, M.D., New York.

A Contribution to the Study of Muscular Tremor. By Frederick Peterson, M.D., New York. (Reprint.)

LETTERS RECEIVED.

S. S. White Dental Mfg. Co., Philadelphia; Dr. M. E. Stephens, Albany, N. Y.; Dr. Addison H. Foster, Chicago; Dr. W. H. Begg, Columbus Grove, O.; Dr. James Egan, Racine, Wis.; Dr. Ramsay, St. Cloud, Minn.; Dr. R. T. Bates, New Lebanon, N. Y.; Oneida Spring Co., Utica, N. Y.; Fairchild, Bros. & Foster, New York; Dr. H. M. Lane, Las Paulo, Brazil; Dr. J. W. S. Gouley, New York; Dr. J. W. Powers, Hudson, Ia.; Dr. W. F. Waugh, Philadelphia; Dr. F. S. Dodds, Anna, Ill.; Dr. N. S. Lane, Eyota, Minn.; Dr. J. W. Thompson, St. Paul, Minn.; Dr. C. F. McGahan, Chattanooga, Tenn.; Dr. C. L. Ford, Ann Arbor, Mich.; E. T. Boag, New York; Dr. S. P. Duffield, Detroit, Mich.; Dr. C. A. Harvey, New York; Dr. I. N. Brainerd, Alma, Mich.; Dr. P. O. Hooper, Cincinnati, O.; Dr. F. G. Groner, Big Rapids, Mich.; Dr. Joseph Price, Philadelphia; Dr. J. H. Black, Philadelphia; McIntosh Battery and Optical Co., Chicago; Dr. Thos. L. Stedman, New York; Dr. J. B. Murdoch, Pittsburgh; Thos. F. Goode, Buffalo Lithia Springs, Va.; Dr. D. W. Prentiss, Washington, D. C.; Dr. A. R. Stuart, Toledo, O.; Cupples & Hurd, Boston; Dr. J. H. Bryan, Washington, D. C.; Dr. Maris Gibson, Wilkesbarre, Pa.; Dr. John Gemmill, Tyrone, Pa.; Dr. R. J. Dunglison, Philadelphia; The Clinical Reporter, St. Louis, Mo.; Dr. Thomas Elliott, Worth, Pa.; Mrs. A. S. M. Morgan, Pittsburgh, Pa.; J. Astier, Paris, France; Dr. D. Bernardino, Muscoda, Wis.; Dr. Wm. Woodruff, London, Ontario; Dr. J. M. Long, Minden Mines, Mo.; Dr. John B. Rosson, Ava, Ill.; Dr. R. M. Wycoff, Brooklyn, N. Y.; Dr. W. G. Brownlow, New Canaan, Conn.; Dr. C. B. Miller, Lawrenceburgh, Ind.; Dr. M. O. Lower, North Manchester, Ind.; I. Haldestein, New York City; Dr. Edwin Meigs Ground, Bartlett, N. H.; Lehn & Fink, New York City; Dr. H.

A. Carrington, New Haven, Conn.; Dr. C. S. Boynton, Burlington, Vt.; Dr. H. C. Dalton, St. Louis, Mo.; Pappenheim's Zeitung-Verlag, Vienna, Austria; Women's Medical College, New York City; F. A. Davis, Philadelphia, Pa.; Dr. David Barrow, Lexington, Ky.; American & Continental Sanitas Co., New York City; J. J. Rendleman, Cairo, Ill.; Dr. Wm. Pepper, Philadelphia; Dr. John E. Owen, Evansville, Ind.; Dr. J. T. Davis, Zanesville, O.; L. von Olst, Orange City, Ia.; Dr. W. S. Watson, Matteawan, N. Y.; Dr. L. Woodruff, Alton, O.; L. A. Vocum, Wooster, O.; National Druggist, St. Louis; Dr. D. K. White, Richmond, O.; Dr. Samuel A. Fisk, Denver, Col.; Dr. J. H. Murphy, St. Paul, Minn.; Dr. J. Berrien Lindsley, Nashville, Tenn.; Dr. John H. Hollister, Newport, R. I.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from June 22, 1889, to July 5, 1889.

Major William H. Forwood, Surgeon, extension of leave of absence on surgeon's certificate of disability granted in S. O. 118, May 23, 1889, from this office, is further extended four months on surgeon's certificate of disability, by direction of the Secretary of War. Par. 14, S. O. 142, A. G. O., Washington, June 20, 1889.

Major J. K. Corson, Surgeon U. S. Army, granted leave of absence for one month, with permission to apply for an extension of one month. Par. 2, S. O. 65, Hdqrs. Dept. of the Columbia.

By direction of the Secretary of War, Major Ezra Woodruff, Surgeon, is relieved from temporary duty at Ft. Monroe, Va., and will report in person to the commanding officer at Ft. Hamilton, N. Y., for duty at that station. Par. 5, S. O. 146, A. G. O., June 25, 1889.

Capt. Walter W. R. Fisher, Asst. Surgeon, extension of leave of absence granted in S. O. 41, Div. of the Pacific, June 12, 1889, is still further extended fifteen days, by direction of the Secretary of War. Par. 8, S. O. 146, A. G. O., Washington, June 25, 1889.

Capt. John Van R. Hoff, Asst. Surgeon U. S. Army, is relieved from duty at Ft. Reno, Ind. Ter., and ordered to Ft. Riley, Kan. Par. 6, S. O. 145, A. G. O., Washington, D. C., June 24, 1889.

Major Dallas Bache, Surgeon U. S. Army, is relieved from duty at Ft. Riley, Kan., and ordered to report to the commanding General, Dept. of the Platte, for duty as Medical Director of that Department. Par. 6, S. O. 145, A. G. O., Washington, D. C., June 24, 1889.

Major J. K. Corson, Surgeon, leave of absence for one month granted by par. 2, S. O. 65, c. s., Dept. of the Columbia, is extended one month. Par. 1, S. O. 45, Hdqrs. Div. of the Pacific, June 24, 1889.

Capt. A. R. Chapin, Asst. Surgeon U. S. Army, granted leave of absence for twenty-five days, to commence on or about July 2, 1889. Par. 6, S. O. 145, Div. of the Atlantic, June 27, 1889.

Capt. R. J. Gibson, Asst. Surgeon U. S. Army, reports arrival July 2, 1889, at Camp Lewis, Fisher's Island, N. Y., in compliance with par. 5, S. O. 133, Div. of the Atlantic, which designated him as medical officer for the encampment (rifle practice) at Fisher's Island, N. Y.

Capt. George T. Beale, Medical Storekeeper, is granted leave of absence for two months, by direction of the Secretary of War. Par. 8, S. O. 148, A. G. O., June 27, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending June 29, 1889.

Surgeon C. A. Siegfried, detached from the U. S. S. "Quinnebaug" and wait orders.

P. A. Surgeon L. W. Curtis, detached from the U. S. S. "Quinnebaug" and wait orders.

Asst. Surgeon Geo. T. Smith, ordered to the Army and Navy Hospital, Hot Springs, Ark.

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ADDRESSES.

CONSIDERATIONS CONCERNING SOME EXTERNAL SOURCES OF INFECTION IN THEIR BEARING ON PRE- VENTIVE MEDICINE.

*Being the Address on State Medicine delivered before the American
Medical Association, in Newport, on June 28, 1889.*

BY WM. H. WELCH, M.D.,

PROFESSOR OF PATHOLOGY, JOHNS HOPKINS UNIVERSITY,
BALTIMORE.

No department of medicine has been cultivated in recent years with such zeal and with such fruitful results, as that relating to the causes of infectious diseases. The most important of these results for preventive medicine, and for the welfare of mankind is the knowledge that a large proportion of the causes of sickness and death are removable.

It is evident that efforts to preserve health will be most intelligently and effectually applied when they are based upon an accurate and full knowledge of the agencies which cause disease. Public and private hygiene, however, can not, and fortunately has not, waited for the full light of that day whose dawn has only begun to appear, when we shall have a clear insight into the causation of preventable diseases. Cleanliness and comfort demand that means shall be taken to render pure the ground on which we live, the air which we breathe, and the water and food with which we are supplied, and we must meet these needs without waiting to learn just what relation infectious agents bear to the earth, air, water and food.

It is a fortunate circumstance that modern sanitation has been controlled so largely by the belief in the dependence of endemic and epidemic diseases upon organic impurities in the soil and in the water. Incomplete and even erroneous in many respects, as are the views which have prevailed concerning the origin and spread of epidemic diseases by the decomposition of organic substances, the sanitary measures which have been directed toward the removal of filth have achieved great conquests in limiting the development and extension of many infectious diseases.

The benefits which one Commonwealth of this country has derived from the intelligent employment of public sanitary measures were clearly and forcibly presented before this Association last year by Dr. Walcott in his admirable Address on State Medicine.

While nothing should be said, or need be said, to lessen the importance of cleanliness for public health, it is important to bear in mind, that hygienic cleanliness and æsthetic cleanliness are not identical. In water which meets the most severe chemical tests of purity typhoid bacilli have been found. On the other hand, the air in the Berlin sewers, which certainly does not meet the most modest demands of æsthetic cleanliness, has been found to be nearly or quite free from bacteria.

It needs only to be stated to be generally admitted that the scientific basis of preventive medicine must be the accurate knowledge of the causative agents of preventable diseases, a knowledge which can be derived only from a careful study of all of the properties of these agents, the modes of their reception and of their elimination by the body, the circumstances which favor, and those which retard or prevent their development and spread, their behavior in the various substances which surround us, or which we take into our bodies and the sources of infection, not only those which laboratory experiments show to be possible, but those which are actually operative.

So long as we were unacquainted with the living organisms causing infection, the means at our disposal for studying the etiology of infectious diseases were limited to the observation of all of the circumstances which we could determine regarding the origin and spread of these diseases. We could only infer what might be the properties of the infectious agents from the study of phenomena often obscure and difficult of interpretation. Chiefly by this method of investigation the science of epidemiology has been built up. It has established facts and laws no less of practical than of scientific importance. But it has left unsolved many problems, and has filled gaps with speculations. Admitted epidemiological facts are often open to various interpretations.

We are evidently at a great advantage when we can study the epidemiological facts with a knowledge of the substances which actually cause in-

fection, and this we are now enabled to do for a limited number of the infectious diseases. This new method of research, which thus far has been mainly bacteriological, has aided us not so much by simplifying the problems of etiology, which still remain complicated enough, as by affording greater accuracy to the results.

It is my aim in this address to consider some results of the modern studies of pathogenic microorganisms in their bearing upon preventive medicine, more particularly upon the sources of infection. It is, of course, impossible within the limits of the address, to attempt a complete survey of this important field. Time will permit the presentation of only some of the salient points.

Infectious diseases are those which are caused by the multiplication within the body of pathogenic microorganisms.

It has always been recognized that some infectious diseases, such as the exanthematous fevers, are conveyed directly from the sick to the healthy. It is not disputed that in these, evidently contagious diseases, the infectious germ is discharged from the body in a state capable at once of giving rise to infection.

In a second group of infectious diseases, of which malaria is the type, the infected individual neither transmits the disease to another person, nor, so far as we know, is capable of infecting a locality. Here there is a reason to believe that the infectious germ is not thrown off in a living state from the body, but is destroyed within the body. In this group the origin of infection under natural conditions is always outside of the body.

In a third group there is still dispute whether the disease can be transmitted directly from person to person, but all are agreed that the infected individual can infect a locality. It is especially fortunate that the bacteria which cause cholera and typhoid fever, the two most important representatives of this group of so-called miasmatic-contagious diseases, have been discovered and isolated in pure culture. These are the diseases about whose origin and epidemic extension there has been the greatest controversy. They, above all other diseases, have given the impulse to public sanitation during the last half century. The degree of success with which their extension in a community is prevented is an important gauge of the excellence of the local sanitary arrangements. A clear comprehension of the origin and spread of these diseases signifies the solution of many of the most vexed and important problems of epidemiology and of State hygiene.

It is difficult to understand how those who accept the discovery that the bacteria causing typhoid fever and cholera, have been found and cultivated from the stools of patients affected with these diseases, can doubt that these patients are possible sources of contagion, or can entertain the

view once so widely prevalent that the infectious germs of these diseases are discharged from the body in a condition incapable of producing immediate infection. In an address delivered on another occasion, I have endeavored to present the consideration which reconcile the comparative infrequency of direct contagion for these diseases, with the belief in the elimination of the causative germs in an active state from the body, and have there pointed out several well known factors which determine the frequency of conveyance of an infectious disease by contagion. There are reasons, some of them very obvious, why diseases in which the infectious substances are operative only when received into the digestive tract, and are discharged usually only with the feces, are less likely to be transmitted by immediate contagion than those diseases in which the virus is thrown off from the skin on epidermal scales.

But the field of operation of direct contagion for these so-called miasmatic-contagious diseases is at most a restricted one, and the chief sources of infection are outside of the body from which primarily the infectious germs may have been derived. It is to these external sources of infection, which are of such importance in public hygiene, that I wish especially to direct attention.

A full comprehension of the sources of infection is, of course, to be obtained only by a detailed study of the etiology of the individual infectious diseases, but this is, of course, impossible within the limits of an address. It may, however, be useful to present some of the facts which have a general bearing upon the subject. Let us consider, then, from the point of view of modern bacteriological studies, what rôle in harboring or transporting infectious agents, may be played by those substances or media with which we necessarily come into intimate contact, such as the air, the ground, the water and our food.

It is universally admitted that many infectious agents may be transported by the air, but the extent of danger from this source has often been exaggerated. It is a popular error to suppose that most of the minute particles of dust in the air either are or contain living organisms. The methods for determining the number, and kind of bacteria and fungi in the air, are now fairly satisfactory, although by no means perfect. These have shown that while the number of living bacteria and fungi in the atmosphere, in and around human habitations cannot be considered small, still it is greatly inferior to that in the ground or in most waters. Unlike fungus spores, bacteria do not seem to occur to any extent in the air as single detached particles, which would then necessarily be extremely minute, but rather in clumps or attached to particles of dust of relatively large size. As a result in a perfectly quiet atmosphere, these comparatively heavy particles which contain bacteria, rapidly settle to the ground or upon

underlying objects, and are easily filtered out by passing the air through porous substances, such as cotton-wool or sand. Rain washes down a large number of bacteria from the air. That the air bacteria are derived from the ground or objects upon it is shown by their total absence, as a rule, from sea air at a distance from land, this distance naturally varying with the direction and strength of the wind.

A fact of capital importance in understanding the relations of bacteria to the air, and one of great significance for preventive medicine, is the impossibility of currents of air detaching bacteria from moist surfaces. Substances containing pathogenic bacteria, as, for instance, sputum containing tubercle bacilli or excreta holding typhoid bacilli, can not, therefore, infect the air unless these substances first become dry and converted into a fine powder. We are able to understand why the expired breath is free from bacteria and cannot convey infection, except as little particles may be mechanically detached by acts of coughing, sneezing or hawking. Those bacteria, the vitality of which is rapidly destroyed by complete desiccation, such as those of Asiatic cholera, evidently are not likely to be transported as infectious agents by the air, if we except such occasional occurrences as their conveyance for a short distance in spray.

The only pathogenic bacteria which hitherto have been found in the air, are the pus organisms, including the streptococcus, found by Prudden in a series of cases of diphtheria, and tubercle bacilli, but no far-reaching conclusions can be drawn from the failure to find other infectious organisms when we consider the imperfection of our methods, and the small number of observations directed to this point. The evidence in other ways is conclusive that many infectious agents—and here the malarial germ should be prominently mentioned—can be, and often are, conveyed by the air. While we are inclined to restrict within narrower limits than has been customary the danger of infection through the air, we must recognize that this still remains an important source of infection for many diseases. All those, however, who have worked practically with the cultivation of microorganisms, have come to regard contact with infected substances as more dangerous than exposure to the air, and the same lesson may be learned from the methods which modern surgeons have found best adapted to prevent the infection of wounds with the cosmopolitan bacteria, which cause suppuration.

We are not, of course, to suppose that infectious germs floating in the form of dust in the atmosphere are dangerous, only from the possibility of our drawing them in with the breath. Such germs may be deposited on substances with which we readily come into contact, or they may fall on articles of food where they may find conditions

suitable for their reproduction, which cannot occur when they are suspended in the air in consequence of the lack of moisture.

From the facts which have been mentioned concerning the relations of bacteria to the air, what points of view present themselves to guide us in preventing infection through this channel? Surely something more than that this purpose is accomplished simply by abolishing foul odors.

Certain indications are so plain as to need only to be mentioned in this connection, such as the disinfection and removal, as far as possible, of all infected substances, an indication which applies equally to all channels of infection, and which it is much easier to mention than it is to describe how it shall be realized. But there are two indications which apply especially to the prevention of the transportation of disease germs by the air. One is the necessity of guarding, so far as practicable, against the desiccation, when exposed to the air, of substances which contain infectious germs not destroyed by drying, and another is free ventilation.

For no disease is the importance of the first of these indications so evident and so well established as for tuberculosis, the most devastating of all infectious diseases. Against this disease, formidable as it may seem to cope with it, the courageous crusade of preventive medicine has begun, and is destined to continue.

It is now generally recognized that the principal, although not the sole, sources of tuberculous infection are the sputum of individuals affected with pulmonary tuberculosis and the milk of tuberculous cows. Cornet, who has made a laborious and most instructive experimental study of the modes and dangers of infection from tuberculous sputum, has also elaborated the practical measures which should be adopted to diminish or annihilate these dangers. These measures have been so recently and so widely published in medical journals, and so clearly presented before a Section of this Association, that I mention them only to call the attention of practitioners of medicine to their importance, and to emphasize the fact that they are based chiefly upon the principle that infectious substances of such nature as tuberculous sputum should not be allowed to become dry and converted into dust when exposed to the air.

By means of free ventilation, disease-producing microorganisms which may be present in the air of rooms, are carried away and distributed so far apart that the chance of infection from this source is removed or reduced to a minimum. It is a well-established clinical observation that the distance through which the specific microbes of such diseases as small-pox or scarlatina are likely to be carried from the patient by the air, in such concentration as to cause infection, is small, usually not more than a few feet, but increases by

crowding of patients and absence of free ventilation. The well-known experiences in the prophylaxis and treatment of typhus fever are a forcible illustration of the value of free ventilation.

It is, of course, not to be understood that by ventilation we accomplish the disinfection of a house or apartment. Ventilation is only an adjunct of such disinfection which, as already mentioned, is of first importance. Time will not permit, nor is it in the plan of this address, to discuss the details of such questions as house disinfection, but I may be permitted to say that the methods for disinfecting apartments have been worked out on a satisfactory experimental basis, and should be known, at least, by all public health officers. Whether it be pertinent to this occasion or not, I cannot forbear to add my protest to that of others against placing reliance upon any method hitherto employed of disinfecting houses or apartments by fumigation. And I would, furthermore, call attention to the lack in most cities of this country of public disinfecting establishments, such as are in use with excellent results in many cities of Europe, and which are indispensable for the thorough and convenient disinfection of clothing, bedding, carpets, curtains, etc.

After this short digression let us pass from the consideration of the air as a carrier of infection to another important external source of infection, namely, the ground. That the prevalence of many infectious diseases depends upon conditions pertaining to the soil cannot be questioned, but the nature and the extent of this influence have been and are the subjects of lively discussion. The epidemiological school led by Pettenkofer, assigns as is well-known, to the ground the chief, and even a specific and indispensable influence in the spread of many epidemic diseases, particularly cholera and typhoid fever. The statistics, studies and speculations of epidemiologists which have related to this subject, probably surpass in number and extent those concerning any other epidemiological factor. The exclusive ground hypothesis has become an ingenious and carefully elaborated doctrine with those who believe that such diseases as cholera and typhoid fever can never be transmitted by contagion. These authorities cling to this doctrine with a tenacity which indicates that on it depends the survival of the exclusively localistic dogma for these diseases.

To all who have not held aloof from modern bacteriological investigations, it must be clear that views which have widely prevailed concerning the relations of many infectious germs to the soil require revision. The question is still a difficult and perplexing one, but on some hitherto obscure or misunderstood points these investigations have shed light, and from the same source we may expect further important contributions to a comprehension of the relations of the ground to the development of infectious diseases.

The ground, unlike the air, is the resting or the breeding place of a vast number of species of microorganisms, including some which are pathogenic. Instead of a few bacteria or fungi in a liter as with the air, we find in most specimens of earth thousands, and often hundreds of thousands of microorganisms in a cubic centimeter. Fraenkel found the virgin soil almost as rich in bacteria and fungi as that around human habitations.

This vast richness in microorganisms belongs, however, only to the superficial layers of the earth. Where the ground has not been greatly disturbed by human hands, there is, as a rule, about three to five feet below the surface an abrupt diminution in the number of living organisms, and at the depth where the sub-soil water usually lies, bacteria and fungi have nearly or entirely disappeared. Fraenkel, who first observed this sudden diminution in the number of microorganisms at a certain level beneath the surface, explains this singular fact by the formation at this level of that sticky accumulation of fine particles consisting largely of bacteria which forms the efficient layer in large sand filters for water. Of course the number of bacteria, and the depth to which they penetrate, will vary somewhat with the character, especially the porosity of the soil and its treatment, but the important fact that all, or nearly all of the bacteria and fungi are retained in the ground above the level of the sub-soil water, will doubtless hold true for most situations.

The conditions are not favorable for the multiplication of bacteria in the depth of the ground, as is shown by the fact that in specimens of earth brought to the surface from a depth of a few feet, the bacteria which are at first present, rapidly multiply. What all of the conditions are which prevent the reproduction of bacteria in the deep soil has not been ascertained, but the fact necessitates similar precautions in the bacteriological examination of the soil as in that of water.

We have but meagre information as to the kinds of bacteria present in the ground in comparison with their vast number. Many of those which have been isolated and studied in pure culture possess but little interest for us so far as we know. To some of the microorganisms in the soil appears to be assigned the rôle of reducing or of oxidizing highly organized substances to the simple forms required for the nutrition of plants. We are in the habit of considering so much the injurious bacteria that it is pleasant to contemplate this beneficent function, so essential to the preservation of life on this globe.

Among the pathogenic bacteria which have their natural home in the soil the most widely distributed are the bacilli of malignant œdema and those of tetanus. I have found some garden earth in Baltimore extremely rich in tetanus bacilli, so that the inoculation of animals in the

laboratory with small bits of this earth rarely fails to produce tetanus. In infected localities the anthrax bacillus and in two instances the typhoid bacillus, so far as it was possible to identify it, have been discovered in the earth. There is reason to believe that other germs infectious to human beings may have their abiding place in the ground; certainly no one doubts that the malarial germ lives there. As the malarial germ has been shown to be an organism entirely different from the bacteria and the fungi, we cannot apply directly to its behavior in the soil and its transportation by the air, facts which have been ascertained only for the latter species of microorganisms, and the same precautions must be observed for other diseases with whose agents of infection we are not acquainted, as, for instance, yellow fever.

In view of the facility with which infectious germs derived from human beings or animals may gain access to the soil, it becomes a matter of great importance to determine how far such germs find in the soil conditions favorable for their preservation or their growth. We have, as is well known, a number of epidemiological observations bearing upon this subject, but with few exceptions these can be variously interpreted, and it is not my purpose to discuss them. The more exact bacteriological methods can, of course, be applied only to the comparatively small number of infectious diseases the causative germs of which have been isolated and cultivated, and these methods hitherto have been applied to this question only imperfectly. We cannot regard the soil as a definite and unvarying substance in its chemical, physical and biological properties. What has been found true of one kind of soil may not be so of another. Moreover, we cannot in our experiments bring together all of the conditions in nature which may have a bearing on the behavior of specific microorganisms in the soil. We must, therefore, be cautious in coming to positive conclusions on this point on the basis of experiments, especially those with negative result. With these cautions kept constantly in mind the question, however, is one eminently open to experimental study.

The experiments which have thus far been made to determine the behavior of infectious microorganisms in the ground have related especially to the bacilli of anthrax, of typhoid fever and of cholera, and, fortunately, these are the diseases about whose relations to the ground there has been the most discussion, and concerning which we are most eager to acquire definite information.

As regards anthrax bacilli, it has been determined that in ordinary garden or field earth they do not multiply, but in earth contaminated by blood, urine or feces their reproduction can occur. They can grow on various vegetable substrata. There is no reason to doubt, therefore, that the anthrax bacilli can find in or on the ground suitable conditions for their multiplication, although

such conditions are not everywhere present. For durable infection of the soil with anthrax bacilli it is, however, more important that these bacilli should find there suitable conditions for the formation of spores, than that they should be able simply to multiply. The vegetable forms of anthrax bacilli would not, as a rule, be able to survive for any great length of time the hostile influences which they are likely to encounter in the ground, such as insufficient or exhausted nutriment, absence of sufficient moisture and the attacks of saprophytic organisms. On the other hand, against these injurious influences the anthrax spores have great resistance. In the superficial layers of the ground the anthrax bacilli may often find those conditions of moisture, of temperature, of oxygen supply and of insufficient food which we know are most favorable for the development of their spores; indeed, Soyka has shown that the ground presents often these conditions better than our culture media. A circumstance discovered by Feltz, which, however, needs confirmation, is, if true, of not little significance. He finds that anthrax bacilli may undergo a progressive diminution in virulence in the soil. If this should be true likewise of other infectious microorganisms, we should be able to account in some instances for the variable degree of virulence which clinical observation indicates that certain agents of infection acquire. So far as anthrax bacilli are concerned, we may conclude, therefore, that the ground occasionally offers suitable conditions for their reproduction, but what is of greater importance, it offers especially favorable conditions for their long-continued preservation in the form of spores. I must forego here the further consideration of the special circumstances inherent in the soil which control the origin and spread of epidemics of anthrax in cattle, although many interesting investigations have been directed to this subject.

Of greater interest to physicians is the behavior of typhoid and of cholera bacteria in the ground. As has already been intimated, the ground is regarded by Pettenkofer and his school as the principal breeding-place of these microorganisms outside of the body. This view, however, is not supported by bacteriological investigations. Inasmuch as the cholera and typhoid bacilli may multiply on various vegetable substrata and substances derived from animals at temperatures often present in the ground, it is evident that here and there conditions may be present for their growth in the ground, but this growth is likely to be soon interrupted by the invasion of ordinary saprophytic organisms and other harmful influences. The typhoid bacilli are more hardy in resisting these invaders than are the cholera bacteria, which easily succumb, but even for the former, so far as our present knowledge extends, the ground can rarely serve as a favorable breeding-place.

It is not, however, necessary that these organisms should multiply in order to infect for a considerable time the ground; it is sufficient if their vitality is preserved. As to this latter point, the reports of different investigators are not altogether concordant. Such excellent observers as Koch, Kitasato and Uffelmann found that the cholera bacteria, when added to feces or a mixture of feces and urine, rapidly diminished in number and, at the end of three or four days at the most, had wholly disappeared. In a mixture of the intestinal contents from a cholera corpse with earth and water Koch found numerous cholera bacteria at the end of three days, but none at the end of five days. On the other hand, Gruber reports the detection of cholera bacteria in cholera dejecta fifteen days old. The weight of bacteriological evidence, therefore, is opposed to the supposition that the bacteria of Asiatic cholera preserve their vitality for any considerable time in the ground or in the excreta.

With respect to the bacilli which cause typhoid fever, it has been shown by Uffelmann that these may live in feces, mixture of feces and urine, and mixture of garden earth, feces and urine for at least four and five months, and doubtless longer, although they may die at the end of a shorter period. He also finds that, under these apparently unfavorable conditions, some multiplication of the bacilli may occur, although not to any considerable extent. Grancher and Deschamps found that typhoid bacilli may live in the soil for at least five months and a half. Unlike the cholera bacteria, therefore, the typhoid bacilli may exist for months at least in the ground and in fecal matter, holding their own against the growth of multitudes of saprophytes. This difference in the behavior of cholera and of typhoid germs is in harmony with clinical experience.

As regards other infectious bacteria than those which have been considered I shall only mention that tubercle bacilli, although incapable of multiplication under the ordinary conditions of nature outside of the body, may preserve their vitality for a long period in the ground, on account of their resistant character; and furthermore, that the pyogenic cocci, on account of their considerably resistant nature and their modest demands in the way of nutriment, can be preserved and sometimes, probably, grow in the ground. Indeed, the staphylococcus pyogenes aureus has been found in the earth by Lübbert.

The conclusion which we may draw from the observations mentioned is that, in general, the soil is not a good breeding-place for most of the infectious bacteria with which we are acquainted, but that it can retain for a long time with unimpaired vitality those which produce spores or which offer considerable resistance to injurious agencies, such as anthrax bacilli, typhoid bacilli, tubercle bacilli and the pyogenic cocci.

In order to become infected with bacteria in or on the ground these bacteria must in some way be introduced into the body; and we must, therefore, now attempt to determine how bacteria may be transported to us from the ground. So various and intricate are the possibilities for this transportation that it is hopeless to attempt to specify them all.

There occurs to us first the possibility of the conveyance of infectious microorganisms from the soil by means of currents of air, a mode of carrying infection which has already been considered. Here I shall only repeat that the wind can remove bacteria from the ground only when the surface is dry and presents particles of dust, and that the sole, and perhaps the chief, danger is not that we may inhale the infected dust.

Manifold are the ways in which we may be brought into contact with infectious bacteria in the ground, either directly or by means of vegetables to which particles of earth are attached, by the intervention of domestic animals, by the medium of flies or other insects, and in a variety of other ways, more or less apparent.

An important, doubtless for some diseases the most important, medium of transportation of bacteria from an infected soil is the water which we drink or use for domestic purposes. From what has been said it is evidently not the subsoil water which is dangerous, for infectious like other bacteria cannot generally reach this in a living state, but the danger is from the surface water and from that which trickles through the upper layers of the ground, as well as from that which escapes from defective drains, gutters, cesspools, privy vaults and wrongly constructed sewers or improper disposal of sewage. I shall have something to say presently of water as a source of infection and shall not further elaborate here the dangers of infection of drinking-water through contaminated soil, dangers which, especially as regards typhoid fever, are widely appreciated in this country, even if often imperfectly counteracted.

A point which has been much discussed, and one of interest, is whether bacteria which are in the depths of the ground can come to the surface. Two agencies especially have been considered by some as capable of transporting bacteria from the depth to the surface. One is ascending currents of air in the ground and the other is the capillarity of fluids in the minute pores of the ground. The first of these suspected agencies must be unquestionably rejected in view of the fact that even a few inches of sand is sufficient to filter all of the bacteria out of the air, even when it is in much more rapid motion than can occur within the ground. Moreover, that degree of dryness which is essential for the detachment of bacteria by air-currents is not likely to be present much below the surface of the ground. The experiments

which have been made to determine to what extent bacteria may be carried upward by the capillarity of fluids in the ground have not yielded harmonious results, but the weight of evidence is opposed to the belief that this is a factor of any considerable importance for this purpose.

From what has been said concerning the growth of pathogenic bacteria in the soil we shall not be inclined to attribute to the multiplication and the motility of these organisms much influence in changing their place in the ground.

The somewhat sensational rôle assigned by Pasteur to earth worms of bringing bacteria to the surface cannot be wholly ignored and has received support from observations of Bollinger regarding anthrax, but it is questionable whether much importance is to be attached to this agency.

Regarding the depth to which typhoid bacilli may penetrate in the soil, the experiments of Grancher and Deschamps show that at the end of five weeks they may reach a depth of 16 to 20 inches below the surface. As Hoffmann has demonstrated the extraordinary slowness with which fluids and fine particles penetrate the soil, it is probable that in the course of time a greater depth than this may be reached. Indeed, Macé claims to have found in the neighborhood of a wall, suspected of infection, typhoid bacilli, together with ordinary intestinal bacteria, at a depth of at least $6\frac{1}{2}$ feet below the surface. There are a number of instances recorded in which there is good reason to believe that turning up the soil and cleaning out privies or dung-heaps in which typhoid stools have been thrown, have given rise to typhoid fever, even after the infectious excreta have remained there a year and more.

It cannot be said that bacteriological investigations have as yet shed much light upon a factor which plays a great rôle in epidemiology, namely, predisposition to infection from the ground, according to locality and time, and this deficiency receives constant and vehement emphasis from the localistic school of epidemiologists. We can, however, readily understand that varying conditions, such as temperature, moisture, porosity, quality of soil may exert a controlling influence in determining the behavior of infectious germs in the soil and the facility of their transportation to human beings or animals. As regards that much-discussed question, the significance of variations in the height of the subsoil water, in relation to the prevalence of certain epidemic diseases, particularly cholera and typhoid fever, we now know that this cannot depend upon the presence of bacteria in the subsoil water itself or in the capillary layers immediately above it. It has been plausibly suggested that with the sinking of the subsoil water fluids from infected cesspools, privy vaults, and other localities may more readily be drawn into wells or other sources of water-

supply, and that by the same cause the surface of the ground becomes dry, so that dust particles may be lifted by the wind. Other more or less plausible explanations have also been offered, but it must be confessed that our positive information on this point is meagre. There can, however, be little doubt that this significance of the variations in subsoil water is apparent only for certain localities and has been considerably exaggerated and often misunderstood. It is not, however, pertinent to my theme to discuss this or other purely epidemiological observations concerning the relations of the ground to the spread of epidemic diseases, interesting and important as are many of these observations.

Before leaving the subject of the ground as a source of infection, permit me to indicate briefly some conclusions which may be drawn from what has been said as to the principles which should guide us in preventing infection directly or indirectly from the ground.

First in importance is to keep infectious substances, so far as possible, from the ground. This implies the early disinfection or destruction of such substances as typhoid and cholera excreta and tuberculous sputum.

Second. The ground should be rendered, so far as practicable, unsuitable for the continued existence of infectious germs. This, at least for some diseases, is accomplished by a proper system of drainage, which, moreover, for other reasons possesses hygienic importance.

Third. Means should be provided to prevent waste products from getting into the ground around human habitations or from gaining access to water used for drinking or domestic purposes. In cities this can be accomplished only by a properly constructed system of sewers. The system of storing waste products in cesspools, whence they are to be occasionally removed cannot be approved on hygienic grounds. There are conditions in which the disposal of waste products in deep wells only used for this purpose and whence these products can filter into the deep layers of the ground may be permissible, but this can never be considered an ideal method of getting rid of excrementitious substances and is wholly wrong in regions where wells are used for drinking water. But I am trespassing with these remarks upon a province which does not belong to me, but rather to practical sanitarians and engineers. I shall only add that the advantage gained by preventing organic waste from soaking into the ground is not so much that the ground is thereby rendered better adapted for the existence of infectious microorganisms, but is due rather to the fact that this waste is likely to contain infectious germs.

Finally, in cities good pavements, absence of unnecessary disturbance of the soil, cleanliness of the streets and laying of the dust by sprinkling are not only conducive to comfort but are some-

times hygienically important in preventing infection from the ground and dust.

In passing from the consideration of the ground to that of water one feels that he now has to do with a possible source of infection against which in this country and in England he is at liberty to make any accusation he chooses without fear of contradiction. There is reason to believe that such accusation has been repeatedly made without any proof of misdemeanor on the part of the water. It is not, therefore, with any desire to awaken further the medical or public conscience that I wish to say a few words concerning the behavior of bacteria in water and the dangers of infection from this source. That such dangers are very real must be apparent when we consider the universal employment of water and its exposure to contamination from all kinds of sources.

Ordinary water, as is well known, contains bacteria in large number. Not a few species of bacteria can multiply rapidly and to a large amount even in distilled water. These are so-called water-bacteria, and like most of the microorganisms found in ordinary drinking water are perfectly harmless saprophytes. What we wish to know is, how pathogenic microorganisms conduct themselves in water. Can they grow or be preserved for any length of time in a living condition in water? As regards the multiplication of pathogenic bacteria in water the results of different experimenters do not altogether agree. Whereas Bolton failed to find any growth, but rather a progressive diminution in number of pathogenic bacteria planted in sterilized water, Wolffhügel and Riedel observed a limited reproduction of such bacteria, including those of typhoid fever and of cholera. This difference is due probably to the methods of experimentation employed. According to Kraus, these latter bacteria diminish rapidly in number in unsterilized spring or well water kept at a low temperature. These experiments indicate that water, even when contaminated with more organic impurities than are likely ever to be present in drinking water, is not a favorable breeding place for pathogenic bacteria. Still it is to be remembered that these laboratory experiments do not reproduce exactly all of the conditions in nature, and it may happen that in some nook or cranny or vegetable deposit at the side of a well or stream some pathogenic bacteria may find suitable conditions for their multiplication.

But, as has been repeatedly emphasized in this address, it is not necessary that pathogenic bacteria should actually multiply in a medium in order to render it infectious. It is sufficient if their life and virulence are not destroyed in a very short time. As to this important point, Bolton found that in sterilized water typhoid bacilli may preserve their vitality for over three months and cholera bacteria for eight to fourteen days, while

Wolffhügel and Riedel preserved the latter in water for about eighty days. Under natural conditions, however, these organisms are exposed to the overgrowth of the water bacteria, so that Kraus found in unsterilized water kept at a temperature of 10.5°C . the typhoid bacilli no longer demonstrable after seven days, and the cholera bacteria after two days. The conditions in Kraus's experiments were as unfavorable as possible for the continued existence of these pathogenic bacteria, more unfavorable than those often present at the season of prevalence of cholera and typhoid fever, nevertheless I do not see that they justify the conclusions of Kraus as to the slight probability of drinking water ever conveying infection with the germs of typhoid fever and of cholera. To render such a conclusion probable it would be necessary to demonstrate a much shorter preservation than even Kraus himself found. In judging this question it should not be overlooked that infection of drinking water with the typhoid or the cholera germs is not so often the result of throwing typhoid or cholera stools directly into the source of water-supply as it is the consequence of leaky drains, cesspools, privy-vaults or infected soil, so that there may be continued or repeated accessions of infected material to the water.

In view of the facts presented, there is no sufficient reason, therefore, from a bacteriological point of view, of rejecting the transmissibility of typhoid fever and cholera by the medium of drinking water. This conclusion seems irresistible when we call to mind that Koch once found the cholera bacteria in large number in the water of a tank in India, and that the typhoid bacilli have been repeatedly found in drinking water of localities where typhoid fever existed. Nor do I see how it is possible to interpret certain epidemiological facts in any other way than by assuming that these diseases can be contracted from infected drinking water, although I know that there are still high authorities who obstinately refuse to accept this interpretation of the facts.

In this connection it may be mentioned that pathogenic bacteria may preserve their vitality longer in ice than in unsterilized drinking water. Thus Prudden found typhoid bacilli still alive which had been contained in ice 103 days.

When we come to consider the ways in which water may become infected with pathogenic microorganisms we recognize at once a distinction in this respect between surface water and subsoil water. Whereas the subsoil water may be regarded under ordinary circumstances and in most places as germ-free, the surface water, such as that in rivers and streams, is exposed to all manner of infection from the ground, the air, and the direct admission of waste substances. Unfortunately in the ordinary way of obtaining subsoil water for drinking purposes by means of dug wells this distinction is obliterated, for the water

which enters these wells free from bacteria is converted into a surface water often exposed, by the situation of the well, to more dangerous contamination than other surface waters used for drinking purposes.

Now let us turn our attention, as we have done with other sources of infection, to a brief outline of certain general principles which may help us in avoiding infection from the water.

We shall in the first place avoid so far as possible the use of water suspected of infection, especially with the germs of such diseases as typhoid fever and cholera. When it is necessary to use this suspected water it should be boiled.

As regards the vital question of water-supply, it may be stated as a general principle that no hygienic guarantee can be given for the purity of surface water which has not been subjected to a proper system of filtration, or for the purity of spring or well water fed from the subsoil, unless such water is protected from the possibility of infection through the upper layers of the soil or from the air. This is not saying that water which meets certain chemical and biological tests and which is so situated that the opportunities for its contamination appear to be absent or reduced to a minimum is not admissible for the supply of drinking water, but the possibility of infection can be removed only by the fulfillment of the conditions just named, and upon these conditions the hygienic purist will always insist.

Unfortunately we have at present no domestic filters which are satisfactory, and most of those in common use are worse than none, as they soon furnish a filtrate richer in bacteria than the original water. The only effective method of water-filtration for the general supply is by means of large sand filters, such as are in use with excellent results in Berlin and some other cities. These require skilled attention. I cannot on this occasion discuss the construction or working of these filters, but would refer those who are interested to the full and careful investigation of the Berlin filters by Wolffhügel and by Plagge and Proskauer.

What is accomplished by these artificial sand filters is accomplished under natural conditions, also by the ground, which furnishes a subsoil water free from microorganisms, and to obtain pure water we have only to devise means by which this subsoil water may be secured without the chance of contamination. Just as the water which has passed through the sand filters is collected in suitable reservoirs and is distributed in pipes, which do not admit contamination from without, so by means of properly constructed artesian or driven wells we may secure the naturally filtered subsoil water with the same freedom from the chances of infection.

It is well to bear in mind that no biological or chemical tests of water can replace those measures

which have been mentioned as necessary to secure purity of water-supply. These tests are of value only when applied with proper precautions and with due consideration of the special circumstances of each case for which they are employed. There has been much profitless discussion as to whether greater significance is to be attached to the chemical or to the bacteriological examination of water. Each has its own special field of application and in this the one cannot replace the other method. The bacteriological examination has for hygienic purposes the advantage that it may enable us to detect the specific agents of infection in the form of microorganisms, as has already been done for cholera bacteria and typhoid bacilli, but this is a comparatively rare result and does not at present afford a wide field of application for this method. The significance of the bacteriological test is to be based more frequently upon the fact that it concerns itself with the same class of microorganisms to which some of the recognized and doubtless many of the undiscovered infectious agents belong and from the behavior of which in some respects conclusions can be drawn as to the behavior of the pathogenic organisms. Thus the bacteriological test is the only one which enables us to judge correctly of the efficacy of those methods of filtration of surface water and of construction of wells which insure purity of water-supply. The points of view from which we can estimate correctly according to our present knowledge the relative merits and fields of application of the chemical and of the bacteriological methods of water examination have been clearly indicated by Plagge and Proskauer, and by Wolffhügel. The theme is one beyond the limits or the scope of this discourse and I have referred to it chiefly to emphasize the fact that we cannot rely upon chemical or bacteriological tests of water to the exclusion of those protective measures which have been mentioned, although I do not intend to imply that each of these tests when properly employed does not afford important information and is not of great value in many cases.

I have already taxed so largely your time and patience that I must pass over with brief mention the food as a source of infection. Unlike those external sources of infection which we have hitherto considered, many articles of food afford an excellent nutritive medium for the growth of a number of species of pathogenic microorganisms, and in many instances this growth may be abundant without appreciable change in the appearance or taste of the food.

When we consider in how large degree the certainty and the severity of infection with many kinds of pathogenic microorganisms depend upon the number of such organisms received into the body, we can appreciate that the danger of infection from food which contains a mass of growing

pathogenic bacteria may be much greater than that resulting from the reception of infected water or aid, media in which infectious organisms are rarely present in other than a very dilute condition. The entrance into the body of a single infections bacterium with the inspired air is, at least in the case of many diseases, not likely to cause infection, but let this bacterium fall upon some article of food, as for instance upon milk, where it can multiply in a short time at a favorable temperature many thousand-fold and evidently the chances of infection become vastly increased.

Among the various agencies by which infectious organisms may gain access to the food may be mentioned the deposition of dust conveyed by the air, earth adhering to vegetables, water used in mixing with or in the preparation of food, in cleansing dishes, clothes, etc., and contact in manifold other ways with infected substances.

Fortunately a very large part of our food is sterilized in the process of cooking shortly before it is partaken, so that the dangers of infection from this source is greatly diminished and comes into consideration only for uncooked or partly cooked food and for food which, although it may have been thoroughly sterilized by heat, is allowed to stand a considerable time before it is used. Milk, in consequence of its extensive employment in an unsterilized state and of the excellent nutritive conditions which it presents to many pathogenic bacteria, should be emphasized as especially liable to convey certain kinds of infection; a fact supported not less by bacteriological than by clinical observations. Hesse found that also a large number of ordinary articles of food prepared in the kitchen in the usual way for the table and then sterilized afford a good medium for the growth and preservation of typhoid and cholera bacteria, frequently without appreciable change in the appearance of food.

Upon solid articles of food bacteria may multiply in separate colonies, so that it may readily happen that only one or two of those who partake of the food eat the infected part, whereas with infected liquids, such as milk, the infection is more likely to be transmitted to a larger number of those who are exposed.

In another important particular the food differs from the other sources of infection which we have considered. Not only the growth of infectious bacteria, but also that of bacteria incapable of multiplication within the body may give rise in milk and other kinds of food to various ptomaines, products of fermentation and other injurious substances which when ingested are likely to cause more or less severe intoxication or to render the alimentary tract more susceptible to the invasion and multiplication of genuinely infectious organisms.

It is plain that the liability to infection from food will vary according to locality and season.

In some places and among some races the proportions of uncooked food used is much greater than in other places and among other races. In general in summer and in autumn the quantity of fruit and food ingested in the raw state is greater than at other seasons, and during the summer and autumn there is also greater danger from the transportation of disease germs from the ground in the form of dust, and the amount of liquids imbibed is greater. The elements of predisposition according to place and time upon which epidemiologists are so fond of laying stress are not therefore absent from the source of infection now under consideration.

I have thus far spoken only of the secondary infection of food by pathogenic microorganisms, but as is well known the substances used for food may be primarily infected. Chief in importance in the latter category are the various entozoa and other parasites which infect animals slaughtered for food. The dangers to mankind resulting from the diseases of animals form a separate theme, which would require more time and space than this address affords for their proper consideration. I shall content myself on this occasion with only a brief reference to infections from the milk and flesh of tuberculous cattle.

It has been abundantly demonstrated by numerous experiments that the milk from tuberculous cows is capable when ingested of causing tuberculosis. How serious is this danger may be seen from the statistics of Bollinger, who found with cows affected with extensive tuberculosis the milk infections in 80 per cent. of the cases, in cows with moderate tuberculosis the milk infections in 66 per cent. of the cases, and in cows with only slight tuberculosis the milk infections in 33 per cent. of the cases. Dilution of the infected milk with other milk or with water diminished or in sufficient degree it removed the danger of infection. Bollinger estimates that at least 5 per cent. of the cows are tuberculous. From statistics furnished me by Mr. A.W. Clement, V. S., it appears that the number of tuberculous cows in Baltimore which are slaughtered is not less than 3 to 4 per cent. Among some breeds of cattle tuberculosis is known to be much more prevalent than this.

There is no evidence that the meat of tuberculous cattle contains tubercle bacilli in sufficient numbers to convey infection, unless it be very exceptionally. Nevertheless one will not willingly consume meat from an animal known to be tuberculous. This instinctive repugnance, as well as the possibility of post-mortem inspection of the meat in dressing the animal seem good grounds for discarding such meat. The question, however, as to the rejection of meat of tuberculous animals has important economic bearings and has not been entirely settled. As to the rejection of the milk from such animals, however, there can be no difference of

opinion, although this is a point not easily controlled.

The practical measures to adopt in order to avoid infection from the food are for the most part sufficiently obvious. Still it is not to be expected that every possibility of infection from this source will be avoided. It is difficult to discuss the matters considered in this address without seeming to pose as an alarmist. But it is the superficial and half knowledge of these subjects which is most likely to exaggerate the dangers. While one will not under ordinary circumstances refrain from eating raw fruit or food which has not been thoroughly sterilized, or from using unboiled or natural waters in the fear that he may swallow typhoid or cholera bacteria, still in a locality infected with cholera or typhoid fever he will, if wise, not allow himself the same freedom in these respects. Cow's milk, unless its source can be carefully controlled, should, when used as a habitual article of diet, as with infants, be boiled, or the mixed milk of a number of cows should be selected, but this latter precaution offers less protection than the former.

In most places in this country we are sadly lacking in good sanitary inspection of the food, especially of the animal food, offered for sale. One cannot visit the slaughter-house in Berlin or Munich, and doubtless similar ones are to be found elsewhere, and watch the intelligent and skilled inspection of slaughtered animals without being impressed with our deficiency in this respect. In large cities an essential condition for the efficient sanitary inspection of animal food is that there should be only a few places, and preferably only one place, where animals are permitted to be slaughtered. Skilled veterinarians should be selected for much of the work of inspection.

It may reasonably be asked that the National Government, which has already spent so much money for the study and extermination of such diseases as pleuro-pneumonia, of cattle, and hog cholera, which are not known to endanger the life of human beings, should turn its energies also to means for eradicating tuberculosis from cattle, which is a scourge not only to the economic interests of farmers and dairymen, but also to the health of human beings.

Without any pretension to having done more in this address than to sketch here and there a few principles derived from bacteriological researches concerning only some of the most widely distributed external sources of infection, I trust that enough has been said to show the folly of any exclusive dogma as to modes of infection. The ways of infection, even in one and the same disease, are manifold and various, and can never be resolved into exclusive hypotheses, such as the drinking-water hypothesis, the ground hypothesis, etc.

It follows, therefore, that it is not by sanitary improvements in one direction only that we can control the spread of preventable epidemic diseases. In one situation the improvements in the supply of drinking water check the prevalence of typhoid fever, in another place similar measures show no such influence; or again, in one city the introduction of a good system of sewerage diminishes epidemic diseases, and in another no similar result follows. We should, therefore, aim to secure so far as possible good sanitary arrangements in all directions and in all respects.

It has also been rendered evident in what has been said that infectious agents differ markedly from each other in their behavior, so that while public sanitation aims at those measures which are found to be most widely beneficial, it should not forget that each infectious disease is as much a separate problem in its prophylaxis as in its symptomatology, etiology and treatment. It will not aim to combat cholera with the means found best adapted to scarlet fever, but it will adopt preventive measures as directly to the specific end in view as possible.

In presenting to you the results of researches chiefly bacteriological concerning the scientific basis of preventive medicine, I hope to escape the accusation of onesidedness and narrowness by the statement that I do not for a moment intend to imply that the bacteriological method is our only source of accurate knowledge on the subjects which have been considered. My aim is accomplished if I have succeeded in making clear that this method has established facts which aid in a clearer conception of the causes of some important infectious diseases, in a better understanding of the sources and danger of infection, and in a more efficient selection and application of sanitary measures.

If this science of only a few years' growth has furnished already acquisitions to knowledge so important, so far reaching, may we not look forward with assurance to the solution of many dark problems in the domain of infectious diseases, problems the solution of which may yield to preventive medicine a future of usefulness and success which we cannot now foresee.

DR. PHILIP F. BRAKELY, who for forty years was the Secretary of the Medical Society of Warren County, N. J., died in Belvidere, at the age of 75, on July 3. He was a representative man in northern New Jersey, just as Dr. Wm. Elmer, who died six days before him, was an able standard bearer in the southern section of the State. Dr. Brakely was early identified with the American Medical Association, and a permanent member of the State Society. His death has been ascribed to the infirmities of advancing age, culminating in cardiac syncope.

ADDRESS ON THE PROGRESS OF MEDICAL SCIENCE DURING THE PAST HALF CENTURY.

BY SIR JAMES GRANT, M.D., K.C.M.G.,
PHYSICIAN TO THE GOVERNOR-GENERAL OF CANADA.

Delivered at the Fortieth Annual Meeting of the American Medical Association, Newport, R. I., June 27, 1889.

Sir James Grant, M.D., of Ottawa, Canada, upon being called upon, rose and spoke as follows: I beg to return to you my sincere thanks for the invitation extended by a committee of this Association to be present at this meeting of the medical profession of the United States, and it is an additional source of gratification that I am asked to a seat on this platform. I am reminded of the fact that when the Marquis of Lorne was governor of Canada, the Royal Society was invited to lunch at the government house. When the health of the president of the United States was proposed, a sentiment which we Canadians fully appreciate, and which we are delighted to honor next to that of our glorious Queen Victoria, Mark Twain was asked to respond. He thanked his excellency for the compliment and was proud to be the recipient of the distinction, but regretted that being unprepared he was unable to respond. I feel very much in the same position on being called upon to speak to this large body before me. For fully twenty-five years I have been in the habit of attending the meetings of your Association at various points, and it is to me a source of pride and gratitude to be able to note the progress of that profession to which I have the honor to belong. This is an exceedingly important epoch in the history of our profession. You have just celebrated your one hundredth anniversary, which marks the progress of this great country. In entering the hall to-day, the observation dropped from a bystander that the insane doctors were meeting here. It struck me as somewhat peculiar, inasmuch as I was not aware of the fact that this meeting could appropriate that idea. It was soon cleared up as I learned that that branch of the profession met here. Let me, for a short time, draw your attention to the remarkable advance in the several departments of the profession, which has been made within the past century.

It was in 1835 that Gardner Hill, of the Lincoln Lunatic Asylum, announced the treatment of insanity by non-restraint. Prior to that time the poor lunatic was subject to be confined in the corner of a cell with chains round his neck, his arms manacled, and pendulous clubs attached to his feet in order to prevent locomotion. His food was served to him as it would be to an ordinary quadruped, and in fact the whole treatment of the insane in those days was most irrational in its character. Much credit is due to Pinel in Paris, Tuke of York, and Charlesworth in the city of

Lincoln asylum, in which the grand final experimenting of entire freedom of the insane was carried out.

We find here that in the great institutions of this country for the treatment of the insane every indication of progressive development as to the principles of treatment in cases of mental aberration have been carried into operation most successfully. You have undoubtedly great workers in the subject of psychological investigations. When in Edinburgh some years ago, Dr. Tuke, the author of that admirable work on "Insanity," remarked to me that by far the best journal on psychological medicine was that published by the late Dr. Jewell, of Chicago. The investigations of the late Dr. Gray, of Utica, are well known, doubtless, to every member of the Association. The subject of cerebral pathology attracted his closest attention, and his demonstrations by the large microscopic sections of the brain, which he was enabled to make, did much to convey an accurate idea of cerebral structure under very diverse circumstances. Strange to say that some of the most violent forms of insanity ever under the microscope have not been traced to anything like change of structure. Such, also, was the impression conveyed to me by Tuke, of Edinburgh. These, of course, may be looked upon as irregular cases, as usually insanity rarely takes place without some definable reason in the great nervous center. Under these circumstances is not the trite and laconic observation of *Punch* brought home to us with more than ordinary force: "What is matter, never mind, and what is mind, that's the matter." Pursuing this subject still further the investigations of our physiologists within the past quarter of a century have certainly accomplished much as regards our knowledge of the nervous system. Disturbed cerebral centers, frequently telegraph their abnormal condition to the peripheral surface, producing an abnormal condition of facial expression. By a process of careful analytical induction such men as Ferrier, of London, Hamilton and Seguin, of New York, and Hammond, of Washington, have been enabled to take stock of the changes and define the region of the disturbed centers. This embraces the great recent advances in the subject of cerebral localization, and is the very cue to the advances in cranial surgery undertaken by such men as Horsley, of London, McKeon, of Glasgow, and Seguin and Warren, of New York.

In looking around me on this platform, I am extremely grateful to find present one of the ex-presidents of this Association, Dr. Bowditch, of Boston, whose name is so closely associated in the subject of pleuritic effusion, and who worked so vigorously to convey his accurate impressions as regards the treatment of this important thoracic disease. Not alone have his observations

been confined to the chest, but in the domain of preventive medicine he has also been one of the pioneers. It has been well said that "an ounce of prevention is better than a pound of cure," and notwithstanding the fact that the members of the medical profession in the advocacy of sanitary science, are curtailing very effectively the means of their ordinary livelihood, and still their philanthropic efforts are never stayed where they can be of advantage to the public at large. The great public institutions of this country give evidence of the principles of sanitary science. The jails are made comfortable even for the most detected criminal. The hospitals give evidences of thorough ventilation and ample supply of light and all the modern improvements for sewage and water supply, very important factors in the treatment of the sick. The articles of diet are being carefully investigated. Milk is now known to be a prolific source both of scarlet fever and diphtheria, and in early life being a common source of diet, how necessary are the investigations of the sanitarian. Less than half a century ago, Farr, of London, gave a great impulse to the progress of sanitary science by the introduction of tabulated statistics as to the life and death rate. In the various medical institutions in this country, as well as in Canada, the subject of sanitary science is receiving the most careful consideration, and very justly so, inasmuch as it pertains most closely to the welfare of society at large. Let me draw your attention for a few moments to a great gymnasium of the human system, of which we have evidence in the surgery of the abdominal cavity. This country has reason to feel proud of what has been accomplished in this department. The name of Ephraim McDowell, of Kentucky, with you, as with ourselves, is a household word. He possessed the skill, the forethought, and the knowledge which enabled him to undertake the first ovariectomy. Following rapidly in his path came Dunlop, of Ohio, and Kimball, of Lowell, Mass., the latter of whom maintains the vigor of youth, although considerably over his seventieth year. These men constitute an intellectual tripod, if I may so term it, in the domain of abdominal surgery. Before me I see a gentleman whose name I cannot refrain from giving expression to, Dr. Senn, of Chicago, who has accomplished so much with reference to the lesions of the intestinal canal. His name will undoubtedly become a household word amongst the members of our profession. While adverting thus personally to what your men have achieved, I feel confident you will join with me in recognizing the admirable achievements in the same line of thought brought about by such men as Sir Spencer Wells, Drs. Thornton, Bantock, Lawson Tait, and Keith, of Edinburgh. Almost every organ in this cavity has been operated on successfully, and the achievements mark beyond a doubt

the progress of surgery during the latter half of this century. There is another department concerning which I desire to allude briefly, namely, that of therapeutics. We have with us to-day Shoemaker, of Philadelphia, and Prof. Stuart, of McGill University in Montreal, both of whom are actively engaged in therapeutic inquiry. Medicines are now no longer, we hope, administered empirically; the why and wherefore are being inquired into most carefully. How the remedial agents act directly or indirectly on the blood and tissues is the subject of much physiological research. Here comes in a question of the slowing of the heart's action by digitalis and the reduction febrile states of the system by antipyretics. Much credit is due to the pharmaceutical associations of this country for the elegance of the preparations placed before the profession, so much so that the old British pharmacopœia must undergo considerable modification. There is also a marked advance in dietetics embracing peptonoids and very digestive materials introduced to tone and assist digestive function. Cod liver oil and its emulsion also occupy an important place as therapeutic adjuncts. And in addition the triturations so recently introduced are doubtless valuable as means of medicinal administration.

On my way from Boston, yesterday, I was gratified to read the instructive address of the Hon. Chauncy Depew to the legal profession, in which he referred to the representation of this country. Of the thirty-two presidents, eighteen were members of the legal profession, and during the past one hundred years, in eighty-two of that period the presidential chair has been occupied by legal lights of this country. The bearing of this subject is extremely important, inasmuch as the medical profession is concerned. In the Commons of Canada there are at least fifteen or twenty medical men, and in the Senate also quite a number of members of the medical profession. In the local provincial parliaments our profession is ably represented. Thus we have been enabled to guide and direct public opinion towards the important question of medical education. I listened with pleasure to the report of your committee on this subject, recommending the introduction of a higher standard in this country, both as to preliminary education and subsequent academic study. Having been upwards of twenty-two years consecutively in the Medical Council of Ontario, I have had opportunities of observing the importance of this question. The local Parliament of Ontario passed a bill for the formation of a Council, giving it the power to appoint examiners in medicine, irrespective of the teaching bodies, and thus guard the portals of entrance into the medical profession. Prior to this time the entrance of homœopaths and eclectics into the profession was very considerable, but now that matters have been placed on a uniform basis of

examination, except in special subjects such as homœopathy and eclectic materia medica, we find that this elevated standard has improved very materially the entire status of our profession; in fact, to-day there are very few graduating homœopaths or eclectics compared to the regular profession, greatly brought about by the introduction of the elevated standard of medical education.

In the great medical centres of this country we cannot fail to miss many of the old landmarks, men like Dunglison, Gross and Pancoast, of Philadelphia; Parker, Buck, Marion Sims, Flint, Hamilton and Van Buren, of New York; White, of Buffalo; Brainard and Jewell, of Chicago. These men gave a force, a character and an impulse to the profession recognized throughout the civilized world. Younger men are following rapidly into the path of distinction, and have achieved more than an ordinary celebrity, such as Thomas and Emmett, of New York; Storer, of Boston; and Goodeil, of Philadelphia; particularly in the diseases of women. I am pleased to observe here so many younger members of the profession. To attend these meetings is a duty they owe not only to themselves but to the communities in which they are laboring. Here we receive, as it were, a bird's eye view of the progress of our profession in every department, and the very intellectual friction produces a tonic influence which sends every member of this Association home with renewed vigor in that profession we delight to honor. A young Western physician, recently visiting Paris, remarked to his professor if he knew so and so in the medical profession; the reply was that he did not. "What has he written?" was the question asked. The young physician answered, "He has not written anything so far as I know, but he has a very large practice." To the younger members of the medical profession I would say, in order to achieve a lasting reputation, record your facts, note carefully bedside observations and do not be in a hurry in drawing sudden conclusions. Thus you will be enabled to contribute your mite to the journalism of this country, and support a most commendable department of literature which guards over the best interests of our profession.

To the profession in Canada permit me to say that I consider ourselves one people. Placed as we are on either side of an imaginary Chinese wall we speak the same language, we enjoy the same literature, we take our inspirations from the same fountains of science in all that pertains to the best interests of our profession, and I will say, in as far as the unity of that profession is concerned, that the beautiful sentiment expressed by Her Majesty the Queen on the completion of the Atlantic cable applies equally well to our profession: "What God hath joined together let no man put asunder." In conclusion let me again return you my warmest thanks for the kind reception I have received and the delight I have experienced

in the presence of your great historian, Bancroft, and many other old friends I see around me still in the vigor of life. Let us then work on to do honor to our profession, to alleviate the sufferings of humanity, and in that profession to perform the important responsibilities assigned to our respective charges. And I feel I cannot do better than express the lines so beautifully written by your gifted poet who now slumbers amidst the illustrious dead of this great Republic:

"Let us then be up and doing,
With a heart for any fate;
Still achieving, still pursuing,
Learn to labor and to wait."

The distinguished speaker was frequently interrupted by loud applause.

ORIGINAL ARTICLES.

CHRONIC INVERSION OF THE UTERUS. REDUCTION BY A NEW METHOD.

*Read in the Section of Obstetrics and Gynecology, at the Fortieth Annual Meeting of the American Medical Association,
June 25, 1889.*

BY HENRY O. MARCY, M.D.,
OF BOSTON.

It is my purpose in this paper to consider only chronic cases of inversion of the uterus, as they are usually presented to the attention of the gynecologist. Cases of partial inversion occurring at labor are believed to be far more common than the teachings of the text-books would lead us to accept. More than once it has occurred under my own observation, and in a recent discussion upon the subject by the members of the Boston Gynecological Society, a considerable number of cases were reported.

It was undoubtedly more frequent during the earlier practice of the midwives, when traction upon the umbilical cord was commonly practiced, in order to bring away the placenta. There is much disagreement of opinion as to the cause of inversion even in these cases, although it is conceded that the uterus is generally very flaccid and muscular contraction of the organ is either irregular or wanting. When the inversion is complete, under such circumstances, the hæmorrhage and shock are often so great as to endanger life.

When promptly recognized the reposition of the organ is generally not attended with serious difficulty. If the placenta has not been detached for the obvious reason of lessening hæmorrhage, it is better to replace, if possible, before separation. This, however, is exceptional, since a more or less partial separation takes place, accompanied by great hæmorrhage. If the cervix is firmly contracted reposition is no longer easy, but nothing is gained by delay and reduction must be accomplished regardless of difficulty. When reposition has taken place, the uterus must be supported

until it is firmly contracted. It has generally been considered wise to tampon the vagina and to retain the patient in the horizontal position, upon the back, for a considerable period, in order to prevent contraction of the abdominal muscles, but it is extremely probable that such precaution is unnecessary and ill-advised.

Intra-uterine growths, usually submucous myoma, very rarely produce inversion of the uterus. When it thus occurs the uterine contraction upon the growth causes a deflection of the fundus or place of attachment, which goes on slowly by traction from above downwards to bring about this result. The late Professor E. Martin, of Berlin, reported a case, in 1869, where a myoma the size of a fist was removed from the fundus of a completely inverted uterus in a multipara, aged 46, which had produced profuse hæmorrhage. Spontaneous reduction of the organ took place a few days later.

Langenbeck and McClintock each report a similar case. Dr. Emmett, in 1869, removed a myoma from the fundus with the écraseur and reduced the inversion by taxis. It is variously estimated that from 5 to 8 per cent. of the cases of inversion are due to this cause.

Several writers of prominence have maintained that irregular uterine action is occasionally the cause of inversion, and that it usually commences about one horn of the uterus. This was especially maintained by Kiwisch. Based upon this view, Dr. E. Noeggerath, of New York, has devised his method of reduction, which consists in compressing the uterine body opposite to each horn, so as to indent one of these and thus offer to the cervical canal a wedge which passes up and is followed rapidly by the other and the whole body of the uterus. Dr. Thomas endorses this method as of great value, and states that he has twice reduced an inverted uterus successfully in this way. Dr. Thomas reports a case operated upon by Dr. Budd, of New York, for the removal of a supposed fibrous polyp, the size of a hen's egg, attached to the uterine cavity near the entrance of the right Fallopian tube. Careful examination, however, showed that it consisted of one horn of the uterus, with a part of the corresponding Fallopian tube and round ligament, thus demonstrating the case to have been one of partial inversion. Reports of cases of inversion of the uterus, associated with a variety of growths, usually ascribed as cause, are to be found scattered through the literature of medicine. Pathological preparations showing this interesting condition are also preserved in a considerable number of collections.

Improbable as it may seem, it still must be accepted as demonstrated that cases of so-called spontaneous inversion have occurred. Several such cases are recorded by Dr. Thomas and others. These, however, as well as cases of spontaneous reduction, must be considered as accidental curi-

osities. It is very probable that the more careful study of cases of this character would make clear a series of causes altogether overlooked. In the Second Volume of the "American System of Gynecology," recently published, is found an excellent article upon chronic inversion of the uterus, by our distinguished countryman, Dr. S. C. Busey, of Washington. He concludes that about 87.5 per centum of all the cases belong to the puerperal variety. "Of 224 cases collected by Crampton, 196 are noted as having occurred simultaneously with the termination of labor. Of the remaining 25 cases, in 12 the accident occurred during the first hour after labor; in 7 during the first day; in 2 during the first week; in 2 during the first month; in 1 during the fifth month; and in 1 during the thirteenth month. The direct causal relation of parturition and the puerperal period to the displacement is thus very clearly demonstrated."

Inversion of the uterus is fortunately a very rare accident. "Madden estimates it to occur only once in 190,000 labors. Reeve at one in 140,000 cases, Aveling at one in 100,000. In the Vienna Lying-in Hospital, from 1845 to 1882, in a total of 280,000 labors, but one case occurred."

Crosse's¹ monograph upon inversion of the uterus is still to be considered as one of the most valuable contributions upon the subject. He collected the history of about 400 cases. He states that about one-third of all the cases, under whatever circumstances, or in whatever degree they occur, prove fatal either very soon or within one month. He analyzed 109 fatal cases. Seventy-two proved fatal within a few hours, most of them within half an hour; 8 cases proved fatal in from one to seven days; and 6 in from one to four weeks. If the patient survive a month the case is chronic and the immediate danger is small. But the danger recommences at eight or nine months, when the menstrual function is resumed. Many of these will die within two years. Cases as usually presented to the gynecologist, by a careful examination, should be easily diagnosticated. Yet in the earlier history of uterine surgery the organ was occasionally removed, under the belief that the operator was dealing with a uterine polyp.

The treatment of chronic inversion of the uterus furnishes a chapter of exceptional interest to the surgeon. Until within the present generation the reposition of the organ was supposed scarcely possible, and if life was seriously threatened amputation was advised. It was not until about 1858 that the attention of the profession was seriously called to the systematic attempt at reduction of the uterus in chronic inversion. The few cases that had been successfully treated prior to this date had been reduced by manipulative dexterity and regarded as accidental rather than systematic.

¹ An essay upon "Invertio Uteri," by John Green Crosse, London, 1845.

In 1858 the late Professor James P. White, of Buffalo, published his method of reduction by continued elastic pressure. His first case occurred in 1856. His second in 1858. Dr. Tyler Smith, of London, published his method also in 1858, which is a combination of elastic pressure and taxis. Dr. White's procedures are so well known that detailed description is unnecessary. A soft-rubber, cup-shaped end of the instrument receives the fundus. A wire spring capable of sustaining ten pounds pressure is adjusted to the other end, and so arranged that it may be brought to bear against the breast of the operator. Bimanual manipulation is an important part of Dr. White's method. One hand grasps firmly the uterus thus supported, while the counter pressure is maintained upon the cervix through the abdominal wall by the other. In Dr. White's first case the inversion was of eight days' standing; in his second, of nearly six months' duration. In this last the organ was reduced after about one hour's continuous effort. In Dr. White's article upon "Chronic Inversion of the Uterus," published in the "Transactions of the International Medical Congress," Philadelphia, 1876, he concludes, based upon the experience of ten cases, "the result has been, in all the cases encountered, restoration by manipulation on the first trial, and, as is believed, without serious injury to the tissues, thus confirming the conviction that all cases are curable, irrespective of their duration."

Dr. Clifton E. Wing, of Boston, reported a case, in 1879, where he reduced an inverted uterus of about three months' duration by continuous elastic pressure. Elastic tubing was attached to the distal end or stem of a cup-shaped instrument adjusted to the fundus. These ends were drawn tight and attached in front and behind to a waist belt. The amount and direction of the force was found to be easily within control. "The evening of the second day there was evidently some gain. The evening of the third day the patient felt a little restless. . . . She slept well under a dose of morphine, but was waked in the middle of the night by feeling something 'jump inside.' On examination in the morning I found the uterus replaced and the end of the instrument extending up into its cavity." Rapid convalescence followed.

Aveling has modified the methods of Drs. White, Tyler Smith, and Wing, by giving the stem supporting the cup a sigmoid curve, so as to carry the direction of the pressure in the line of the upper axis of the pelvis. A belt is applied around the waist and fastened to braces over the shoulders. By this method elastic tension is secured. The patient must be confined to the bed, morphia given to control pain, and the bladder evacuated by the catheter. In eleven successful cases Aveling reports the average time for reduction at about forty hours, the longest being fifty-four and a half hours, the shortest nine hours.

Dr. Robert Barnes, of London, in his work upon "Diseases of Women," figures an instrument which he calls his elastic pessary. This he described and first published in the *Obstetrical Journal*, in 1873. He states "that he attempted to reinvert the uterus in 1868, by continuous elastic pressure, maintained for five days, but was unsuccessful."

The elastic pressure applied by the late Dr. Tyler Smith consisted of an air pessary, retained in the vagina by a T bandage. Barnes, Wing, and Aveling, only modified the method of Dr. White by making the pressure in a graduated elastic force minimized in amount, but which was necessarily in the same ratio greatly extended in time. No new principle was involved and the modifications of application, may, at the best, be considered of doubtful value. Manual manipulative measures, modified but systematized taxis, have also their modern exponents.

Dr. Emmett's method consists of "encircling with the fingers and thumb that portion of the body close to the seat of the inversion, which is firmly grasped, pushed upward, and the fingers then immediately separated to their utmost, at the same time the other hand is employed over the abdomen, in the attempt to roll out the parts forming the ring, by sliding the abdominal parietes over the edge." Thus the effort is systematically made to return first the tissues last displaced, rather than to bring to bear the force upon the fundus proper. This is, physiologically, eminently correct and scientific.

Courty² carried the index and middle fingers of the left hand up the rectum and with them fixed the cervix, and then continued the taxis, as advised by Emmett.

Tate³ carried this method further, by the introduction of one forefinger into the bladder, the better to hold the cervix for the purpose of counter pressure. The uterus held in fixation from above downwards by fingers in the rectum and bladder, the pressure is applied by the thumbs upon the fundus.

Surgical intervention has not been wanting as an aid for the reposition of the inversion of the uterus. Such measures would naturally be applied to the constriction at the neck, the seeming objective factor to be overcome.

Dr. Barnes⁴ writes, "For twenty years I have taught in my lectures that the unyielding cervix may be divided by incisions carried into its substance from above downwards at different points of its circumference. Pressure then applied will cause it to yield more easily. Huguier, Professor Simpson, and Dr. Marion Sims have suggested this plan." It was, however, not until 1868 that Dr. Barnes had the opportunity to carry his teach-

² *Maladies de l'utérus*. 1866.

³ *Cincinnati Lancet and Observer*, March, 1878.

⁴ *Op. cit.*, page 635.

ings into effect. After continuing elastic pressure by the method of Tyler and Smith for five days without success, Dr. Barnes secured the fundus by a noose of tape and drew the organ as far externally as seemed safe, and then incised the neck one-third of an inch deep, laterally and posteriorly. The cervix yielded and the restoration was complete, although lacerations extended quite a little from the incisions. A good recovery followed. Dr. Barnes recommended only lateral incisions of moderate depth, as an aid to sustained elastic pressure. He has since used this method with equal success. Dr. Thomas, of New York, attempted it, but the bleeding proved so very serious, from the division of the circular artery, that life was endangered. Hæmorrhage was controlled with much difficulty. About one week later he reduced the inversion by a method which he had had under consideration for a considerable period by opening the thin abdominal wall over the cervix and dilating it by a glove-stretcher instrument. This, however, was accomplished with much difficulty, owing to the elastic contraction of the cervix. It has been resorted to several times by Dr. Thomas and others, and is commended by this author as affording another means of dealing with this most distressing accident, which may be accepted in preference to amputation. In case of failure amputation may at once be advantageously performed.

The early statistics of amputation give as a result a mortality rate of 25 to 30 per cent. Although the operation for amputation is doubtless ever to be regarded as a major one, involving serious risks to life, there can be no doubt that the death-rate as shown by collated statistics is very much greater than would occur under modern surgical procedure. The comparative absence of danger now attending aseptic laparotomy would cause the profession to look upon Dr. Thomas' operation far more favorably than when first published, seeming, as it then did, a bold, ingenious, but dangerous innovation. It is, however, to be considered if access to the uterus from above gives, after all, the advantages which *a priori* had been expected. The elastic contraction of the cervical fibres is overcome only with the greatest difficulty. In illustration of this I quote from a paper by Dr. Paul F. Mundé, entitled "Laparotomy for Reduction of an Inverted Uterus," read before the Obstetrical Society of New York last October, and published in the *American Journal of Obstetrics* for December, 1888.

"Rapidly making a 2-inch incision through the abdominal wall, I pushed the uterus from the vagina upwards, so as to almost bring the ring into the wound, and, first with my fingers, then with a Palmer's steel dilator tried to stretch it apart. Failing in this, I sent for a glove stretcher, which was disinfected and inserted through the cervical ring to the very bottom of the inverted

uterus and separated to the utmost. The ring was thus completely dilated and I expected immediate reduction, but as the glove stretchers were slowly withdrawn to allow the *pari passu* reposition, from the vagina, at the instant the stretcher slipped out of the ring, the latter closed like a vise; and although the attempt was repeated again and again, no rapidity or concurrence of action in pressing the fundus upward, succeeded in anticipating the contraction of the ring. It seemed almost incredible that it should have been impossible to so dilate and keep open the ring, when it was not only easily accessible, but even visible at the abdominal incision, so as to enable me to slip the fundus back through it. But such was nevertheless the case, and my spectators will, I think, give me credit for having tried faithfully to save this woman's uterus. As a last resort I followed a suggestion of Dr. Lillienthal, my house-surgeon, who assisted me, and passed a Peaslee's needle from the vagina through the firmest portion of the fundus uteri and out of the ring and the abdominal wound, attached a long loop of the thickest silk to it, drew the loop out of the vagina and tied a piece of large, double-rubber drainage-tube to it, as a fulcrum upon which to exert traction. I chose a flexible tube in preference to a flat button of horn or metal, which were at hand, because I feared the latter might prove an obstacle at the contracted ring. Then dilating the ring with the glove stretcher, I tried to draw the fundus up through it by making steady traction on the loop of silk. But the pulpy uterine tissue gave away and the drainage-tube suddenly appeared in the abdominal wound." Dr. Mundé recognizing that no further effort for saving the uterus was justifiable drew the organ as far as possible from the vagina and ligated high up with an elastic cord. From the abdominal cavity he removed the ovaries and tubes and closed the wound. On the thirteenth day the elastic ligature was found loose in the vagina, and after this the patient made an uninterrupted recovery.

Were it possible to find easy and safe access to the cervical canal through an opening in the abdominal wall, Dr. Mundé's case emphasizes the difficulties of overcoming the elastic contraction of the cervical fibres experienced by Dr. Thomas in his first case, and which has been met also by other operators. Again, we have to consider the importance of the danger, and which, so far as I know, has not been referred to by any operator, of pressure upon the inverted Fallopian tubes, carried as they are of necessity quite within the inverted uterus. The method of Dr. Lillienthal is certainly ingenious, is philosophic, and was deserving of a better result. There can be little doubt that the tissues of the fundus were materially impaired in their integrity by the previous prolonged manipulative procedures.

In 1877 I devised a method for the reduction of

the inverted uterus by elastic pressure, the same force to be applied simultaneously upon both the fundus and cervix. This was to be effected by first tying into the cervical tissue four metallic rings. A strip of pure rubber about $1\frac{1}{4}$ inches in width and 18 inches long was slit at either end and nearly to the middle. The ends were to be threaded through the rings and continuous traction applied. I was met with the objection that the theory was perfect, but that the rings could not be made to hold in the tissue. In order to demonstrate the fact, as well as to serve another purpose, which seemed to me might possess material advantage, I applied rings as above suggested to a cervix uteri which I desired to dilate and thus carried by elastic force a conical plug into the cervical canal. When the sutures were deeply applied the cervical tissue was found to bear any reasonable amount of tension protracted through several hours. After a long series of experimentation for the purpose of dilation of the cervix these comparatively crude and clumsy efforts led up to the construction of the repositor, which in its present form seems to answer every requirement. After waiting twelve years the following case gave the opportunity of testing its value.

Mrs. B., æt. 33. Healthy girl. Menstruated at 14. Married at 30. Well and regular in menses until marriage, three years since. Eighteen months ago aborted at the third month. June 19, 1888, was delivered at term with instruments, under ether, by Dr. James McDonald, of Boston, after twenty-four hours of severe labor. Made an imperfect recovery, flowing more or less constantly until operation for the reduction of the inverted uterus, September 8th. Was in bed three weeks and had been confined to room since birth of child. Condition first determined by Dr. McDonald in August. He feels quite sure the inversion did not take place at time of labor. I first saw Mrs. B. the day of the operation. Patient markedly anæmic. Dr. M., assisted by Dr. Lynch, had made a prolonged attempt, under ether, that morning at reduction by taxis, without avail. Endometrium everywhere a bleeding surface. The cervix constricted to render the organ distinctly polypoid in shape. Could feel the edge of the cervical ring. I introduced, with a large, full-curved Hagerdon needle, long ligatures of No. 8 braided silk deeply through the cervical tissues on each of the four sides, equidistant, and brought them into fixation with the repositor. A steady, uniform pressure was kept, at about 8 pounds by the scale. After ten minutes the cervix had yielded perceptibly and in fifteen the organ was half inverted, the cup being covered by the retracted cervix. The operation was completely finished and instrument removed in twenty-six minutes from commencement of pressure. No shock followed and recovery was rapid. After five weeks the patient flowed to soil two or three napkins.

The fourth regular menses occurred Dec. 20th. Dec. 28th visited office; not seen before since operation. Was in perfect health. Uterus not tender, not enlarged, movable and normal to feel. The pressure is applied by means of a spring concealed in the handle. The scale is graduated up to 15 pounds in order to determine the amount of force used.

In reviewing the various methods devised for the reduction of the inverted uterus it will be observed that the place of counter pressure is of necessity found in the vaginal attachment of the organ. In order to bring the force to bear upon the cervix the method of bimanual manipulation, as devised by White, Sims, and others, was appreciated as of great importance. First, by the hand extended over the abdomen, then by two fingers introduced into the rectum, this being further supplemented by the finger introduced into the bladder.

In the method for the application of continued elastic force, first advocated by Drs. Tyler Smith and Barnes, and perfected by Dr. Aveling, the fixation of the cervix is necessarily abandoned and the counter pressure is brought to bear directly upon the vagina and surrounding organs. The force thus applied, at the best, acts only indirectly on the cervical ring, which is the chief criticism of the method. Theoretically a force should be applied to draw down upon and invert the constricted cervical fibres at the same time that pressure is made upon the organ from below upwards. This should be elastic and continuous, but not too great. This force Dr. Emmett wisely recognized in its application by his method of taxis. As illustrated in the case of Dr. Mundé, the dilatation of the cervix, at the most, is only one factor of the problem. Let that force be converted into one acting at the same time from below upwards upon the fundus and the elastic constriction becomes transformed into a power to serve for the reduction of the organ. When applied in this manner the cervical fibres, little by little as they dilate, receive within their grasp and retain the returning portion of the organ. My method is simple and effective. The criticism of a number of the profession is, "I wonder that it has not been thought of before." I exhibited my repositor to Dr. Priestly, of London, when my guest in Boston, a little before the discussion of Dr. Mundé's paper, and he was kind enough to speak favorably of my method at the discussion above referred to. At the same meeting Dr. B. McE. Emmett exhibited an instrument which he had recently devised. It consists of a ring on three stems which is to encircle the cervix. The reinversion is to be accomplished by passing stitches through the border of the cervix and making traction outward over the rings, at the same time pressure is made from below upwards. Dr. Emmett recognizes, as I claim, that counter

pressure to be of value must act upon the cervix itself.

By whatsoever manner applied, it is certainly rational to expect that the reduction of the inverted uterus would be best accomplished by forces acting at the same time in opposite directions. As another means of securing this, Dr. John Byrne, of Brooklyn, has invented a repositor which consists of a cup for the reception of the uterus, at the bottom of which is placed a movable disc attached to a stem which can be projected upwards by means of a screw. In conjunction with it he uses a bell-shaped instrument placed over the abdomen, in order to fix the cervix, through the center of which a plug is projected by a screw attachment, for the purpose of dilating the cervix. In one or two instances this instrument has been used with a satisfactory result. Even so ingenious an instrument, although believed by Skeene to be the best devised is radically faulty. The abdominal wall and bladder, possibly other organs, must be involved between the opposing forces, and fixation of the cervix can never be absolute while there is no means of determining the amount of force applied. If, however, a uniform elastic pressure can be brought to bear at the same time, in the opposite direction, upon both fundus and cervix, it is a manifest gain. If this power is so applied that it is at once, one and the same force, it is possessed of still greater advantage. To place it entirely within the control of the operator without possibility of affecting any other organ, and reducing the power to one of actual observation, as given in pounds, is a still further manifest advantage. All these are rendered as constant and well-known factors in the application of the repositor which I offer the profession for trial and, if found worthy, adoption.

MEDICAL PROGRESS.

CONCERNING GLYCOGEN IN THE MUSCLES.—

E. KÜLZ found that the quantity of glycogen contained in the muscles of the frog is increased under the influence of daily subcutaneous injections of grape sugar, even after extirpation of the liver. It seems, therefore, that the muscles are capable of making glycogen without any assistance on the part of the liver. This conclusion has recently been attacked by Laves. He extirpates the liver of geese and chickens after giving them a meal of barley and oats; ascertaining the amount of glycogen in a fragment of the pectoral muscle immediately before the operation, he repeats the determination some hours (one to thirteen hours) after the extirpation of the liver, and continually finds less glycogen at the second test. He concludes therefrom that the pectoral muscle

is incapable of producing glycogen, in the absence of the liver, at the expense of the feculents in the nourishment.

Schmelz (*Zeitschrift für Biologie*, xxv, p. 180, 1888) repeated Laves' experiments on chickens whose livers had not been extirpated, in this way that he ascertained the amount of glycogen in the muscles before and after a meal rich in hydrocarbonates (barley cane sugar), and he discovered that even twenty-four to thirty-six hours after the meal the muscles did not show yet an increase in glycogen, although the liver was intact. It is, therefore, hardly surprising that Laves discovered no increase of glycogen after the liver had been extirpated, and the experiments of Laves can only serve to settle the question raised by E. Külz. Schmelz completes his work by drawing a parallel between the results of determinations of glycogen by weight and by circumpolarization. He recommends the determination by polarimeter (originated by E. Külz), as expeditious and sufficiently exact.

Luchsinger stated that glycogen disappeared much more rapidly from the muscles than from the livers of animals which had been given no food for a long time, and that this substance did not exist any more in the muscles after a few days' fasting. He drew the conclusion from it that glycogen should not be considered as an indispensable constituent of muscle-fibre and as the source of muscular energy.

Aldehoff (*Zeitschrift für Biologie*, xxv, p. 137, 1888) has taken up this question under the direction of R. Külz, using for the determination the method of R. Külz and A. Cramer. He finds that under the influence of fasting, in the chicken, the pigeon, the rabbit, the horse and the cat, the glycogen diminishes less rapidly in the muscles than in the liver, and that even after a protracted fast the muscles are still relatively rich in glycogen. The muscles of two horses which had received no food for nine days furnished the highest figures of glycogen (2.43, 1.34, 1.28 and 0.98 per cent.) which have ever been found in muscular tissue. The hearts of these two animals contained 0.82 and 0.58 per cent. of glycogen.

The results of determinations of glycogen made by Manché (*Zeitschrift für Biologie*, xxv, p. 163, 1888), by means of Külz' method, confirm in general the statements of Weiss and Chandon: diminution of glycogen in the muscles through tetanization of the muscles or through ligation of the nutrient arteries; increase of glycogen through cutting of the motor nerves.—*Revue des Sciences Médicales*, No. 66, 1889.

ON THE TREATMENT OF TABES BY SUSPENSION.—DUJARDIN-BEAUMETZ tried this treatment on twenty patients, with the following results: In most cases at first an improvement is noted. The patient feels stronger and finds incoördination di-

minishing; the lumbar pains are also less intense. But this improvement does not continue and ceases after two or three weeks. In some cases failure is total, and not the slightest improvement is obtained. The author is as yet unable to say why in some cases this method is effective and in others it is a failure.

So far no experimental evidence of the improvement obtained had been given; it has been furnished by us by using Marey's method. It consists in the reproduction by photography of the attitude of a patient in walking. For this a photographic apparatus is necessary, provided with an interrupter which makes it possible to take pictures in a small fraction of a second. A healthy individual is dressed in black and made to walk before a dark background, electric lamps are fastened to the head, the shoulder, the hip, the knee, and the ankle. A series of illuminated points is thus obtained which connected constitute a schema of the normal walk. The same procedure gone through with an ataxic patient furnishes the picture of the walk peculiar to individuals afflicted with tabes. The pictures taken after the suspension has been performed several times, show that the walk of the patient approaches very near to the normal. This is an absolute scientific proof of the beneficial influence of suspension. As to the mode of procedure the following should be remembered: It is important that the chin and nape of the neck are properly supported, and also that the patient is supported at the armpits. At first the patient should be left suspended for a very short time only, about fifteen to thirty seconds; gradually this is increased until we arrive at the maximum of three minutes. It has been claimed that there is no danger in prolonging considerably the time of suspension, but Dujardin-Beaumetz thinks this is wrong and might result in grave accidents.

Regarding the question, how suspension acts in an ataxic patient, and how it is that this method not only brings about a diminution of the incoordination, but also relieves the lightning-pains of patients with tabes, he says: "Against these lightning-pains the elongation of the nerves has been practiced, first by Langenbach, in 1879, afterwards by Debove and Gillette, in France during 1880. Elongation of nerves or neurectomy was first used in therapeutics by Nussbaum, in 1872, later on by Billroth. In 1876 Verneuil applied it to the treatment of tetanus. According to him elongation acts like an incomplete section of the nerves. Vogt maintains that elongation produces its favorable results by acting upon the neurolema, the pulling causing a rupture of the vessels of the neurolema and the displacement of the nerve-fibrils in the same. I believe that suspension acts in the same way. It is probable that the sensitive cells of the marrow are changed in their molecular state."

However this may be, it is possible in certain cases to obtain some benefits from suspension in patients with tabes, and it would be wrong not to try this method for the cure of an affection as painful as locomotor ataxy.—*Journal de Médecine de Paris*, May 5, 1889.

ON REDUCTION OF NITRATES THROUGH CHOLERA BACTERIA.—DR. PETRI has made a series of experiments which yielded the following results:

1. Cholera bacteria reduce in their growth nitrates to nitrites.

2. The usual culture media, especially gelatine, and often also common cooking salt contain not inconsiderable traces of nitrate.

3. The red cholera reaction is accomplished through the medium of these impurities, *i. e.*, through the reduction of the nitrates.

4. An oxidation of decomposed ammonia through the vital action of the cholera bacteria is not yet proven and is improbable, in view of the fact first mentioned.—*Centralblatt für Bakteriologie und Parasitenkunde*, No. 18, 1889.

EXPERIMENTS REGARDING THE PRODUCTION OF THE VESICULAR MURMUR.—DEHIO (of Dorpat) says: Contrary to the theory according to which the vesicular murmur results solely from the propagation of the tracheo-glottic murmur to the parenchyma of the lung, the vesicular murmur can be plainly distinguished on auscultation, despite the intensity of the wheezing, in cases of stenosis of the larynx. Besides, on auscultating the lungs after Dehio had substituted a simple rubber tube for the trachea and larynx, he could distinctly hear a vesicular murmur which could only be attributed to a transmission of the concussion in the interior of the alveoli of the residual air by the column of inhaled air.—*La Semaine Médicale*, No. 17, 1889.

THERAPY OF DIPHTHERIA.—DR. BURGHARDT has been making for seven years experiments in the cure of diphtheria by blowing a mixture of sulphur and quinine in equal proportions into the larynx, on the tonsils, into the nasal cavity and into the pharynx. These applications were made twice every day, and nothing must be taken for two hours afterwards; spitting must also be avoided. The powder is odorless and does not produce any disagreeable symptoms. Immediately after the application the patient is quieter, fresher, the fever ceases, the feeling of weakness leaves him. The applications are continued after all symptoms have disappeared. Burghardt has not met with a single failure. Of 33 cases, some of which were very dangerous, not one terminated fatally. Time of cure two weeks.—*Wiener Medicinische Wochenschrift*, No. 17, 1889.

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SATURDAY, JULY 20, 1889.

PREVENTIVE INOCULATION.

A lecture that should receive a great deal of attention from the world of medicine is the Croonian lecture on "Preventive Inoculation," recently delivered by M. ROUX, in behalf of M. Pasteur. It is almost eight years since the great scientist laid before the members of the International Medical Congress assembled in London an account of the researches, carried on in his laboratory, on preventive inoculations for chicken cholera and splenic fever. Has the work then begun fulfilled its promise? What place have the principles that it involved in the science of to-day?

In speaking of preventive inoculation we need not stop to consider the great discovery of Jenner. He showed that it is possible to protect ourselves from a dreaded disease by inoculation with a trivial one; but he gave no general method leading to the prevention of other infectious diseases. The discovery of the power of artificially attenuating—or weakening—a virus does furnish us with a veritable method of preventive inoculation; and it has, says M. Roux, given us an uninterrupted series of good results. In revealing the nature of ferments Pasteur taught us the nature of the poison of infectious diseases. We know—or think we know—that viruses are living beings, microbes, and that the development of microbes in the living body produces the phenomena of infectious disease. The processes by which we are enabled to obtain the culture of microbic ferments in a state of purity is the same

that has enabled us to obtain pure cultures of microbic virus outside of the body. The indispensable condition of success in these cultivations is absolute purity. Having obtained them in a state of purity can we not modify them by cultivation in the same way that other plants are modified? We know that many plants that are poisonous in a wild state are harmless or edible in the cultivated state. To modify the viruses by special modes of cultivation was the task to which Pasteur set himself.

Pasteur's first attenuated virus was obtained while studying chicken cholera. His experiments showed that the viruses of infectious diseases are no more the unchangeable entities they were supposed to be, but that, like all other living beings, the microbic virus is susceptible of modifications that heredity perpetuates; that above all, it is the virulent character that is modified, and that this modification can be produced artificially, and regulated according to the wishes of the experimenter. He established the attenuating influence of the air, and explained how the activity of a virus, under natural conditions as seen in an epidemic, is preserved or exhausted, and how the same infectious malady may be sometimes malignant and again light. All that was claimed by Pasteur in regard to chicken cholera was confirmed by him in his inoculations for anthrax—as is now admitted by Koch and others that contested Pasteur's claims. And taking into consideration the fact that we can increase as well as decrease the virulence of a virus, is it rash to believe that in the course of ages new forms of virulence have been evolved, and that the experiments on the variation of virulence have thrown a flood, and will throw a greater flood of light on that obscure question, the origin of new virulent diseases? We see how one and the same kind of microbe can produce diverse morbid effects; how, when it is active or virulent, it causes a general disease, rapidly ending in death, and in its passive or attenuated condition it produces only a special local lesion.

Almost all physicians are now familiar with Pasteur's investigations in regard to *rouget* or swine fever. The extraordinary fact was brought out by Pasteur and Thuillier in these inoculations that as the strength of the virus increases for the rabbit it is diminished for the pig; so much so

that, after a sufficient number of passages of the virus have been made through the rabbit, it has become vaccine for swine, and able to exempt them from the fatal forms of the malady. The question now arises, what would happen with certain human diseases if they were made to pass through a number of different kinds of animals? This process we can see to a certain extent in nature, and gives fresh support to the idea that the vaccine of small-pox is modified by its passage through the horse and cow. We are all familiar with the great controversy in regard to Pasteur's preventive inoculation for rabies—and we know the verdict of the English Commission, which should silence all objectors when taken in connection with the facts. The remarkable point in the discovery of the preventive inoculation against rabies is that the virus itself has not been discovered. As yet it is known to be a microbe by analogy only, since no one has been able to isolate it. Thus, since it cannot be cultivated in flasks and tubes, Pasteur has been obliged to cultivate it in rabbits, and he has been able to do this so easily and with such regularity that the cultivations are ready for use at a specified time. This is one of the strongest examples of the power of the experimental method as applied in medicine—the prevention of a malady the absolute virus of which is still unknown.

The greatest source of danger from microbes is in the poisonous products they form—their ptomaines, a striking example of which is seen in the case of diphtheria. The diphtheritic bacillus does not grow in the interior of tissues, but only on the surface of mucous membranes. The organism is poisoned by the ptomaines formed by the bacillus. These products are found with great difficulty in the body of an animal dead of an infectious disease, since the complex surroundings of the tissues is unsuitable for such research, and the microbes of decomposition themselves form ptomaines. But in cultivations in flasks and tubes we can find these products of the pathogenic activity of the microbes. The first experiments of this kind were made by Pasteur with the microbes of chicken cholera. The chemical products obtained by cultivation of these microbes are capable of causing the symptoms of the disease. In infectious diseases, therefore, the cause of death is poisoning, and the microbes are not only the means of spreading the disease, but also the makers of the poison.

These facts have a distinct bearing upon the question of preventive inoculation. When these chemical products of pathogenic microbes are introduced little by little into the bodies of animals, in such manner as to avoid causing speedy poisoning, but so as to accustom the animal gradually to their presence, the animal becomes refractory to toxic doses, and to the microbe itself. Thus, while formerly immunity could be secured only by the introduction of the microbe itself into the organism, it can now be secured by introducing the chemical substance into the tissues; these vaccine substances being the same that are known to be the cause of death in infectious diseases. And while we can reason only from what we know, we can say that, since these experiments on vaccination by means of soluble substances without microbes have been successful in various maladies, it is but natural to infer that their field of usefulness will be largely widened in the near future. It may be possible, indeed, as Roux points out, to protect ourselves from one malady by means of another; it is necessary only that the microbes of the two diseases should produce similar chemical substances.

What explanation can we give of the immunity conferred by preventive inoculation? At present we can best explain it by saying that when small quantities of the attenuated virus are introduced into the tissues the leucocytes—or phagocytes—accustom themselves to its presence, and when the active virus or microbes are afterwards injected the phagocytes attack and destroy them. But the phagocytes of the non-refractory animals cannot swallow and digest the active microbes, and cannot prevent their development. Immunity is the result of the habituation of the cells to the poisonous products of the microbes.

INTERNATIONAL COURTESIES.

The medical profession of Canada was ably represented at the annual meeting of the Association at Newport.

The eloquent address of Sir James Grant was greeted with rounds of applause, and its noble sentiments met with generous response. In this issue of *THE JOURNAL* a brief abstract of the address will be found.

Another worthy representative of the profession was Professor James Stewart, Registrar of Mc-

Gill University, one of the editors of the *Montreal Medical Journal*. The able articles which have emanated from his pen have been widely quoted. A hearty welcome was accorded to the entire delegation. It is to be hoped that at the next annual meeting, when it shall convene at Nashville, the American Medical Association will be honored with a like representation, from Canada.

THE RUSH MONUMENT FUND.

Had Professor William Pepper, in his eloquent address been able to speak to the entire membership of the Association, and had they listened to the stirring appeal of the Secretary, Dr. A. L. Gihon, doubtless the entire amount of money needed for the erection of the Rush Monument would have been contributed upon the spot. From the generous responses there made, it is confidently believed that a later concerted movement will accomplish this result. As a reason for their not appearing in their regular order, in the published proceedings of the Association, it should be stated that it was deemed advisable to hold the address of Dr. Pepper and the report of Dr. Gihon for use in that connection.

THE ENTERTAINMENTS.

The provisions made by the Committee of Arrangements, by the citizens of Newport, and by the medical profession of the State of Rhode Island, were in every respect all that could be desired, and nothing but an enthusiastic interest in the real work of the Association could have prevented its members from giving themselves over to a continued round of most attractive entertainments at the City of Newport. Let not the loyalty of the Association to its work in hand lead the good people of that city and State to infer that their generous hospitalities were not, to the fullest extent appreciated.

A day never to be forgotten was that when—after the Association-work was over—the Rhode Island Medical Society treated their guests to an old-fashioned “clam-bake” on the shores of Narraganset Bay.

THE JEWELL LIBRARY.

The “Jewell Library” has lately been secured as the nucleus of a great medical library for Chicago. It contains about three thousand volumes

which embrace the most valuable medical literature published up to the time of Dr. Jewell's death. The necessary subscriptions were secured from a few medical men in an incredibly short time. Thus a valuable collection of medical works has been saved from being scattered under the auctioneer's hammer and the library of one of the most devoted doctors Chicago has ever known is again made available to every reader. It is expected that the Chicago Public Library will take care of these books and the additions which will be made to bring them down to the present time, until a suitable building is provided for their reception. Such building, to render the library accessible, must be centrally located. This will add greatly to the primary outlay. It is to be hoped that some Dr. Pearson will liberally endow this library of medicine.

EDITORIAL NOTES.

HOME.

DR. JOHN S. BILLINGS, of the Surgeon-General's office, Washington, D. C., has had conferred upon him by the University of Oxford, the honorary degree of D.C.L.

DR. DANIEL H. WILLIAMS, of Chicago, has recently been appointed by the Governor, a member of the State Board of Health of Illinois.

DIPHTHERIA has been prevalent at Astoria and Stineway, both places being within the jurisdiction of Long Island City; and that city, owing to a deadlock among its officials, is in a bad sanitary condition.

NEW MEDICAL SOCIETIES IN MISSOURI.—We are pleased to learn from the *Kansas City Medical Record*, that the growth of county, district and Section Societies in Missouri is very satisfactory, new ones being reported nearly every week. This is, as it should be, and we hope we may be enabled to chronicle in the near future the same activity among the profession in other States.

THE PSYCHIC LIFE OF MICROÖRGANISMS.—*The Open Court* for July 11, publishes the reply of George John Romanes, LL.D., F.R.S., to the criticisms of M. Alfred Binet on his psychological work in its relation to microörganisms.

THE CHICAGO POLICLINIC.—The following

well-known physicians have been added to the Faculty: Dr. J. H. Etheridge as Professor of Gynecology, and Dr. F. D. Porter as Professor of Medicine.

A NEW HOSPITAL.—The Michigan State Legislature recently appropriated \$50,000 for the erection of a new hospital at Ann Arbor. The citizens have just supplemented that amount by voting to issue bonds for \$25,000.

A MEDICAL EPISODE AT YALE.—At the recent Yale Commencement two of the favored guests took snap shots at the profession of medicine. Mr. Depew manufactured the following: "I once knew a doctor who secured board with an undertaker because he thought that it would improve his business. He said he always knew when the undertaker's business was good, for then there was ice on the butter and flowers on the table."

It is interesting to note the conspicuous ability of Mr. Depew, the great after-dinner undertaker, to grapple with the financial problems involved in such *grave-undertakings*.

Mr. Clemens (Mark Twain) aimed his alleged wit "against the doctors," who, he says, have reduced their labors and increased their charges: "The doctor of to-day does not cart his medicines 'round in a wagon, but carries them in a portmonnaie; he puts three drops of nothing in a glass of water and asks you to furnish the water; a month later you will find the water charged in the bill and you will have to pay for it, too."

As men are willing to pay liberally for novelties, we think Mark should pay for the water.

On the same occasion Mark Twain accused President Gilman, of Johns Hopkins University, of having neglected the rudiments of his education, especially spelling, since he did not know how "to spell 'John' correctly."

Mark is the last man that should criticise, since he has always contended that orthography was one of the "*liberal arts*."

FOREIGN.

IN INDIA the Legislative Council has drafted a bill on the leprosy question—including segregation and medical care.

IN AUSTRALIA the Medical Society of Victoria and the Victorian Branch of the British Medical Association recently met to discuss the Bill to amend the Medical Practitioners' Act of 1865, when it was resolved to support the Bill. The

number of insane persons in South Australia on Dec. 31, 1888, was 758—430 males and 328 females.

IN CHILI the Government has created a "Superior Council of Public Hygiene," consisting of seven members, whose duty it shall be to advise the Government in everything that relates to the public health throughout the Republic. The Council has a laboratory for chemical analysis under its control.

IN RUSSIA, at a recent meeting of the St. Petersburg Deutscher Aertztlicher Verein, Dr. Magawly cited three cases of double central amblyopia, in two men and a boy, caused by looking at an eclipse of the sun with unprotected eyes. After a prolonged stay in a dark room and subsequent wearing of dark protecting spectacles all the patients permanently recovered their sight.

IN GREAT BRITAIN we glean from our exchanges several items of interest. Lord Randolph Churchill will introduce a draft Bill in the House of Commons for the amendment of the constitution of the College of Surgeons. Sir James Paget has been addressing the citizens of Oxford in support of the extension of the Eye Hospital of that city. The common iliac artery was ligatured for a large and rapidly increasing aneurism of the external iliac, by Mr. Clement Lucas, in Guy's Hospital, recently; the patient is doing well, the circulation being well maintained in the foot. The Council of the Royal College of Surgeons in Ireland has passed a resolution congratulating Sir George Porter on the honor conferred on him by the Queen, and through him to the College of Surgeons. Sir George was recently created a Baronet.

CELLULOID MANUFACTURE DANGEROUS.—The French Government has ordered an official investigation into the dangers to life and other interests attending the making of celluloid. During two years three accidents, in each case having occasioned serious injury and loss of life, have occurred at factories making this inflammable material. It is manifest that some form of restriction, as to locality, must be ordained for this kind of work. The process of making this substance involves the use of a considerable proportion of gun-cotton, which is too explosive and inflammable to be permitted to be used in thickly settled neighborhoods.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Official Report of the Fortieth Annual Meeting.

The American Medical Association convened at Music Hall, Newport, Rhode Island, on June 25, 1889, at 11 A.M.

The Chairman of the Committee of Arrangements, DR. H. R. STORER, called the meeting to order and introduced the Rev. Thatcher Thayer, D.D., who invoked the blessing of the Almighty upon the Assembly. Dr. Storer then announced the programme of the entire session and the location of the halls for Sections.

The President, Dr. W. W. Dawson, Ohio; Vice-Presidents, Drs. W. L. Schenck, Kansas; Frank Woodbury, Penna.; Henry O. Walker, Mich.; the Permanent Secretary, Dr. William B. Atkinson, Penna.; the Assistant Secretary, Dr. V. M. Francis, Rhode Island; the Treasurer, Dr. Richard J. Dunglison, Penna., were present.

On motion, reading of the list of members registered was omitted.

Letters of regret from several members of the United States Cabinet and others were read by the Chairman of the Committee of Arrangements.

Invitations were read and accepted for the members to visit the various public buildings, Fort Adams, Fort Wolcott, the U. S. Naval Torpedo Station, the U. S. Naval Training School, the U. S. Life-Saving Station, the Historical Society's building, the Redwood Library, the Newport Hospital, etc.

His Excellency, Herbert W. Ladd, Governor of Rhode Island, welcomed the Association in a brief speech, and was followed by Dr. James H. Eldredge, an Ex-President of the State Medical Society of Rhode Island.

(See page 14.)

The deaths of Dr. F. H. Rehwinkle, Chairman of the Section of Dental and Oral Surgery, and of Dr. J. B. Hunter, of New York, were announced.

On motion, all the physicians of Newport not otherwise entitled to be present were made members by invitation.

Reference having been made to the failure to obtain reduced rates on the railroads, on motion of Dr. J. C. Culbertson, the subject was referred to a special Committee consisting of Drs. Culbertson, W. L. Schenck and J. H. Musser.

The Address of the President, Dr. W. W. Dawson (see page 1), was read by Dr. J. A. Larabee, of Ky., as Dr. Dawson was suffering from an affection of his eye.

Vice-President Dr. W. L. Schenck occupied the Chair.

On motion of Dr. W. Brodie, of Mich., a vote of thanks was tendered to the President for his very able and interesting Address, and it was referred for publication.

On motion of Dr. A. L. Gihon, U. S. Navy, the President was requested to telegraph to the venerable Dr. D. Humphreys Storer, of Boston, an Ex-President of the Association, a filial greeting and regret that he was absent from the meeting.

On motion, the Association adjourned until 10 A.M. on Wednesday.

SECOND DAY, JUNE 26.

The President called the meeting to order at 10 A.M.

Prayer was offered by Right Rev. Thomas M. Clark, the Episcopal Bishop of Rhode Island.

After some announcements by the Committee of Arrangements, the President announced that the Committee on Railroads would meet for a consultation and report on Thursday.

The Permanent Secretary read the names of the Nominating Committee, as follows:

Ark., P. O. Hooper; Col., J. W. Graham; Conn., J. A. Stokes; D. C., Dewitt C. Patterson; Ga., J. B. S. Holmes; Ill., J. S. Marshall; Ind., S. J. Cook; Ia., W. F. Peck; Kan., J. E. Minney; Ky., J. M. Mathews; La., J. L. Bland; Me., F. Hitchcock; Md., John Morris; Mass., E. H. Warren; Mich., W. Brodie; Minn., John H. Murphy; Mo., Isaac N. Love; Miss., J. D. Dabney; N. J., W. Perry Watson; N. H., L. G. Hill; N. Y., E. D. Ferguson; N. C., W. J. Jones; Neb., J. O. Carter; Ohio, W. S. Christopher; Penna., W. H. Parish; R. I., J. L. Collins; S. C., S. M. Orr; Tenn., G. C. Savage; Texas, A. Van Gasken; Va., L. Robinson; Vt., H. D. Holton; W. Va., ———; Wis., W. T. Galloway; U. S. Army, G. Smart; U. S. Navy, J. L. Neilson; U. S. Marine-Hospital Service, W. H. Long; Utah, J. F. Bascom; New Mexico, W. H. Ashley.

On motion, this Committee was instructed to meet immediately.

Dr. Wm. Pepper, of Penna., then delivered the Address in Medicine, which will appear in full in THE JOURNAL.

Dr. A. L. Gihon, Chairman, read an Appeal on behalf of the Rush Monument, which will be published in the same issue with Dr. Pepper's address.

The Permanent Secretary read a reference from the Section on Gynecology, asking that the paper by Dr. Storer on "The Medals of Dr. Rush," be read before the General Session at this time. This was granted.

On motion of Dr. M. L. Herr, of Penna., it was agreed that one member of each County Medical Society in the Union be appointed to solicit funds for the monument. A recess was taken to permit the members to make their offer-

ings to the fund, which resulted in the collection of \$264.50.

The amendments to the Constitution and By-laws being in order a motion of Dr. A. Garcelon, of Maine, to postpone them until Thursday was negatived. The amendment to strike out the last clause of or paragraph of Sec. 7, relating to individually affixing names to the Constitution and Regulations of this Association was adopted after a full explanation of its purport by Dr. N. S. Davis.

Vice-President Dr. F. Woodbury in the Chair.

Dr. Culbertson moved that the whole matter of the other amendments be referred to the Board of Trustees, with the Secretary.

On motion of Dr. J. B. Murdoch, Penna., this was laid on the table.

The next amendment proposing many changes in the Sections was taken up and Dr. N. S. Davis moved to postpone all except the first paragraph. After some further discussion, on motion of Dr. Larrabee to lay this on the table and indefinitely postpone, it was carried by a large majority. A motion to reconsider this action was, on motion of Dr. Gihon, laid on the table.

The amendment providing for a General Committee, or Council, was next considered. A motion by Dr. C. R. Earley, Penna., to indefinitely postpone the entire subject was lost. After much discussion by Drs. Davis, Larrabee, Murdoch, Scott, Vaughan, Millard, Connor, Quimby, Edw. Jackson and Baldy, the amendment was rejected.

The Permanent Secretary read the following communication from the Section on State Medicine:

Resolved, That the American Medical Association is of opinion that it is a duty devolving on all Nations to take measures to eradicate any plague centre from their territory, that the existence of such plague centres is a menace to all other Nations, and that our State Department be requested to take measures through proper diplomatic channels for the conveyance of this opinion to the Government deemed obnoxious to the opinion as herein expressed.

On motion the action was accepted.

On motion the Association adjourned until Thursday at 10 A.M.

THIRD DAY, JUNE 27.

The President called the Association to order at 10 A.M. Prayer was made by Rev. Jas. Coyle, of Newport.

After announcements by the Committee, Sir James Grant of Canada, and Dr. H. I. Bowditch, were invited to seats on the platform.

Dr. Grant responded to the invitation by a speech, in which he reviewed the valuable work done by the members of the profession in the United States. (See page 84.)

Dr. P. O. Hooper, of the Board of Trustees,

read their report, showing the work done in publishing *THE JOURNAL*, the property on hand, etc., and that *THE JOURNAL* was now free from debt.

REPORT OF THE TRUSTEES FOR THE PUBLISHING OF THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, FOR THE YEAR ENDING JUNE 30, 1889.

The trustees of the American Medical Association for the publication of its Transactions in Journal form, beg leave to make their annual report.

THE JOURNAL, as is well-known to the members, is now within a few days of having completed its twelfth volume and sixth year of publication. The wisdom of the change from an annual volume containing simply its Transactions to that of a weekly issue embracing the papers read before the Association, and such other contributions of interest as its editor may select, is conspicuously apparent, and has the fullest indorsement of the Association.

It is observable that since the starting of *THE JOURNAL*, the attendance at the annual meetings have been better, and the dues from absent members have been more generally paid, and thereby our income increased from less than \$5,000 in 1883 to over \$15,000 in 1889. The report of the Treasurer will show in detail the financial condition of the Association which is that of *THE JOURNAL*. From the beginning of the enterprise it has been the desire of your Trustees, in addition to the publication of the Transactions of the Association, to produce a first-class medical journal. The plant, or means placed at the disposal of the Trustees, was at first very diminutive and tender, and had to be fostered with the greatest care and economy, that we might have a journal of any kind. The Trustees were ably assisted in this delicate and arduous duty by the zeal and ability of the editor—the father, patron and friend of this Association. He has received our thanks, and deserves your hearty commendation for the very valuable services he has given to its establishment.

From the small and uncertain resources available at the beginning, this journal has now attained a sound financial basis, and is to-day the equal, if not the best in the country, and with greater means at our disposal, and the services of a more complete corps of writers which can then be employed, we expect to place it in the very front rank of medical periodicals.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is now honored and everywhere respected, and its location coveted by various cities, publishers and commercial interests.

It has won this high position by its just and independent course, having no enemies to punish or personal interests to serve. In its course it has been, is, and will continue to be loyal to the med-

ical profession and the best interests of the American Medical Association.

From the report of the acting editor for the JOURNAL year ending March 31, 1889, the Trustees make the following extracts which concisely presents the main facts:

Weekly and Total Circulation.—At this date, March 31, 1889, the regular weekly circulation of THE JOURNAL is 4,633, of which 4,309 go to members and subscribers, and 324 to exchanges, foreign and domestic, and advertisers. The total number printed each week is 5,000 copies being 367 in excess of the number required for the regular mail and express lists. An average of 75 are lost by spoilage, as many more go for extra copies to contributors, leaving on file about 200 copies out of which to supply samples, and single copies to complete files of members, when called for. In addition to the regular weekly issues, an extra edition of 20,000 copies was printed in April, 1888, and distributed as sample copies to members of the profession not previously receiving THE JOURNAL, which made the total number of copies of THE JOURNAL circulated during the year 275,000.

Receipts.—As all membership dues are paid to the Treasurer of the Association, only the money paid for subscriptions, advertisements, reprints, extra journals, etc., is received at the office of publication. From the sources just named there has been received at this office during the year ending March 31, 1889: From subscribers, \$2,182.53; from advertisements, \$9,731.60; for reprints, \$844.37; from sale of extra Journals, Codes of Ethics, and Volumes of Transactions, \$77.75; for rent of part of printing office, \$150; and for bindery work for outside parties, \$1,317.71; making a total of \$14,303.96, all of which has been paid to the Treasurer of the Association direct, or through the Treasurer of your Board.

Publication Expenses.—The total publication expenses for the year ending March 31, 1889, for office rent, materials and labor in printing office and bindery, are \$19,808.65; from which should be deducted \$1,317.71 cash received for work done in the bindery for outside parties, and \$150 for storage use of part of printing office, leaving the actual publication expenses of THE JOURNAL for this year, \$18,340.94.

Under the head of *Editorial Expenses* are included the salary of the Editor, payments for Foreign and Domestic Correspondence, the Reports of Medical Societies, Lectures and Papers, and for Assistant Editorial work. The total amount drawn from the Treasury on account of these items during the year ending March 31, 1889, is \$4,534.38; of which \$1,500 was paid to the Editor for the first nine months of the year, \$333.33 for the month of January, 1889, and the remaining \$2,701.05 for the other items named. It is thus seen that the total current expenses on

account of THE JOURNAL, both publication and editorial, for the year ending March 31, 1889, are \$22,875.32.

Expenditures on Account of Plant and Fixtures.

—In accordance with the recommendation contained in my report for 1888, which were sanctioned by your Board, \$720.33 was paid for new type, which enabled us to commence Volume XI, July 1, 1888, with an entire new typographical dress and a better quality of paper. To facilitate the work and economize the cost of folding, stitching, wrapping, etc., \$500 was paid for a wire stitching machine to complete the bindery part of the office.

Property on hand.—The present property belonging to the Publication Department may be stated as follows:

Printing office, type, fixtures, etc.	\$1,477.94
Bindery	650.21
Business office—safes and furniture	185.75
	<hr/>
	\$2,313.90

There are stored in the printing office, at the request of the Treasurer of the Association, 1,149 volumes of the Annual Transactions of the Association, issued during the years prior to the establishment of THE JOURNAL, of estimated value \$2,870. About 25 copies of volumes five and six, 75 copies of volumes seven and eight, and 150 copies of volume nine, ten and eleven of THE JOURNAL remain on hand, and 3,000 copies of a cheap edition of the Code of Ethics.

COMPARATIVE TABLE

Showing the Relative Quantity of Reading Matter in the Five Leading Weekly Medical Journals of the United States:

NAME.	NO. OF PAGES.		AVERAGE NO. OF WORDS.		LESS WORDS THAN THE JOURNAL IN 52 ISSUES.
	In 52 Issues.	In each Issue.	In 52 Issues.	In each Issue.	
The Boston Medical and Surgical Journal.	24	1,248	26,311	1,368,172	429,728
The Medical News of Philadelphia	28	1,456	27,128	1,410,656	387,244
The Medical Record of New York.	28	1,456	32,640	1,697,280	100,620
The New York Medical Journal	28	1,456	32,939	1,712,228	85,072
THE JOURNAL.	36	1,872	34,575	1,797,900	

The present status of *THE JOURNAL* in regard to the number of its pages, exclusive of advertisements, and the actual amount of reading matter, in comparison with the four principal weekly medical journals published in this country, is well shown in the foregoing table, prepared by Mr. J. Harrison White, the business manager of our printing and publication office.

A special edition of *THE JOURNAL*, of 75,000 copies, was issued in May, and one addressed to every physician in the United States and Canada. The expense of this edition was fully covered by the receipts from the advertisements obtained for this special number, and left a slight balance in the treasury. The good result of this enterprise is already apparent at the office of publication.

At the beginning of the year the number of pages of *THE JOURNAL* was increased from 32 to 36. This of course carried with it a considerable increase of expense, but we are glad to be able to state that we will close the year free from debt, and are now in possession of a better plant for producing an acceptable journal than at any former period.

All of which is respectfully submitted by the Board of Trustees.

J. M. TONER,
P. O. HOOPER, W. T. BRIGGS,
LEARTUS CONNOR, JNO. H. HOLLISTER,
E. M. MOORE, A. GARCELON.

On motion the report was adopted.

The Permanent Secretary read the following from the American Social Science Association:

Resolved, That a committee of three be appointed by the President of this Association, to draw up a suitable resolution, indicative of the sense of this body, upon the necessity of a rigid demand on the part of our medical institutions for a more thorough general education antecedent to the study of medicine; suggesting the adoption of entrance examinations for those candidates not possessing a collegiate or university degree, and furthermore urging our medical colleges so to extend the course of study and increase their facilities that the standard of scholarship may be on a par with like institutions abroad.

Resolved, That the same committee draw a resolution which may be presented to the legislative bodies of the respective States, urging the necessity of formulating more stringent laws to guard against the further incorporation of hodies unqualified to properly teach the science of medicine, and to take such steps that all the incorporated medical colleges be subject to a State supervision as to their methods and the standard of instruction.

Resolved, That a copy of these resolutions be presented to the American Medical Association.

On motion of Dr. F. Woodbury the communication was accepted.

Dr. P. S. Conner, Ohio, read the Address in Surgery (see page 15).

On motion of Dr. Brodie thanks were offered Dr. Conner for his address, and it was referred for publication.

The Permanent Secretary read the

REPORT OF THE TREASURER.

I have the honor to report, as Treasurer, that

there is a balance in the Treasury of the Association at this date of \$2,845.65, as shown by the itemized statement which will accompany this report, and be published at length in *THE JOURNAL* of the Association for the information of members.

There is nothing of special interest to report at this time in connection with the financial relations of the Association, except the statement, which must forcibly address itself to all who have at heart the onward progress of the Association, that the Treasury has never yet, since the establishment of *THE JOURNAL*; or, indeed, at any time during the twelve years in which I have had the honor to occupy the position of Treasurer, failed to respond to all authorized and legitimate demands upon it for the interest and advancement of the Association and the maintenance of its now well established journal.

All of which is respectfully submitted.

RICHARD J. DUNGLISON, Treasurer.

DR. RICHARD J. DUNGLISON, Treasurer, in account with the American Medical Association:

DR. 1888.	
May 9. To cash balance, as per report at Cincinnati meeting	\$2,407.83
May 9. To amount received from delegates and members at Cincinnati meeting	4,340.00
1889.	
June 22. To amount of annual dues from members to date	10,465.00
To amount received from office of publication to date	16,585.81
	\$33,798.64

CR. 1888.	
May 10. By exchange and collection charged on checks and drafts deposited at Farmers' and Mechanic's Bank, Philadelphia	\$43.55
May 24. By postage and collection charges, stamped envelopes and postal cards	104.38
May 25. By cash paid Dr. Richard J. Dunglison, Treasurer, expenses of travel, expressage, telegrams, etc.	79.00
June 1. By cash paid Dr. William B. Atkinson, Permanent Secretary, expressage, postage, traveling expenses, etc.	161.78
June 5. By cash for postage, rental of P. O. Box, envelopes, etc.	22.81
June 11. By cash paid Dr. W. W. Dawson, Chairman Com. of Arrangements, for rental of hall, printing, etc.	1,163.40
June 14. By cash paid William F. Fell & Co., printing, postals, slips, circulars, receipts, etc.	16.25
June 14. By cash paid Dunlap & Clarke, printing drafts, cards, circulars, etc., 1887-1888	29.50
June 19. By cash paid Geo. S. Davis, subscription to Index Medicus, 1887-1888	20.00
June 27. By cash paid to Altemus & Co. for stationery	9.00
July 2. By cash for collector's commissions, stationery, postage, etc., to date	53.73
July 19. By cash to Dunlap & Clarke, printing cards, slips, circulars; stamped envelopes	21.25
Aug. 3. By cash to Dunlap & Clarke, printing remittance blanks and postal receipts	10.25
Aug. 3. By cash paid collector's charges and commissions, stamped envelopes, rental P. O. Box, etc.	46.64
Sept. 8. By cash paid 1,000 two-cent envelopes	22.20
Sept. 13. By cash paid Wm. J. Doran, printing credentials	4.95
Oct. 17. By cash to P. C. Merry, for hauling books for Librarian at Washington	5.00
Oct. 18. By cash paid Wm. F. Fell & Co., printing postal cards, membership receipts, drafts, etc.	12.50
Oct. 20. By cash paid for postage, stationery, collector's commissions, stamped envelopes, etc.	60.64
1889.	
Jan. 19. By cash paid Wm. F. Fell & Co., printing envelopes, cards, etc.	16.25
March 20. By cash paid Ward & Barnitz, printing postals, receipts, etc.	4.75
March 30. By cash to Wm. F. Fell & Co., envelopes, slips, cards, etc.	10.00

April 12. By cash paid Dr. C. H. A. Kleinschmidt, Librarian, express charge on books,	8.70
May 6. By cash for postage, stamped envelopes, postals, rental of P. O. Box and collector's charges.	117.67
June 5. By cash for postage, telegrams, slips, collector's commissions, etc.	16.05
June 8. By exchange and collection charges, on checks and drafts deposited at Farmers' and Mechanics' Bank, Philadelphia.	42.37
June 24. By cash paid for publication expenses of the Journal of the Association to June 15, 1889.	22,322.58
June 24. By cash paid for editorial work on the Journal of the Association to June 15, 1889.	6,527.79
June 25. Cash Balance.	2,845.65
	\$33,798.64

This certifies that we have examined the accounts and vouchers of R. J. Dunglison, Treasurer American Medical Association, for the year ending June 24, 1889, and find them correctly cast and properly vouched.

ALONZO GARCELON,
W. T. BRIGGS,
Auditing Committee.

Newport, June 26, 1889.

Also the report of the Auditors.

The undersigned, Auditing Committee of the American Medical Association, beg leave to report that they have attended to the duty devolving upon them and, after close inspection of the bills for the publication of THE JOURNAL of the Association and other expenses pertaining thereto, find that there has been paid into the Treasury of the Association during the year ending June 26, current, the sum of \$33,798.64, and that there has been expended the sum of \$30,952.99, leaving an unexpended balance of \$2,845.65, and that for these expenditures the Treasurer holds bills duly authorized and receipted.

ALONZO GARCELON,
W. T. BRIGGS,
Com. for Auditing Accounts.

On motion these were accepted.

The venerable George Bancroft, the historian, having entered on the stage, he was presented to the members, who arose to receive him.

Dr. P. O. Hooper, from the Committee on Nominations, read the following:

REPORT OF THE COMMITTEE ON NOMINATIONS.

To the President and Members of the American Medical Association:

Your Committee on Nominations have the honor to report that they met yesterday and organized by the selection of Dr. P. O. Hooper, of Arkansas, as Chairman, and Dr. Henry D. Holton, of Vermont, as Secretary. After mature deliberation, they by ballot proceeded to the nomination of the following officers for the ensuing year:

For President—E. M. Moore, of New York.

First Vice-President—J. W. Jackson, of Missouri.

Second Vice-President—H. H. Kimball, of Minnesota.

Third Vice-President—J. H. Warren, of Massachusetts.

Fourth Vice-President—T. B. Evans, of Maryland.

Treasurer—Richard J. Dunglison, of Pennsylvania.

Permanent Secretary—William B. Atkinson, of Pennsylvania.

Librarian—C. H. A. Kleinschmidt, of District of Columbia.

To fill vacancies in Judicial Council caused by expiration of their terms of office—N. S. Davis, Illinois; H. Brown, Kentucky; Wm. Brodie, Michigan; R. C. Moore, Nebraska; G. B. Gillespie, Tennessee; T. A. Foster, Maine; J. B. S. Holmes, Georgia.

To fill vacancies in Board of Trustees of JOURNAL—P. O. Hooper, Arkansas; Alonzo Garcelon, Maine; Isaac N. Love, Missouri. For the unexpired term of E. M. Moore—W. W. Dawson, Ohio.

To deliver the Address on *General Medicine*—N. S. Davis, Illinois.

To deliver the Address on *General Surgery*—Hunter McGuire, Virginia.

To deliver the Address on *State Medicine*—Alfred L. Carroll, New York.

For Members of the Committee on State Medicine—Alabama, Jerome Cochrane; Arkansas, Edwin Bentley; California, G. G. Tyrrell; Colorado, J. Wood; Connecticut, J. C. Kenny; Dakota, F. P. Kenyon; District of Columbia, D. W. Prentiss; Delaware, L. Bush; Florida, J. Y. Porter; Georgia, J. P. Logan; Illinois, J. H. Ranch; Indiana, F. W. Beard; Iowa, A. B. Bowen; Kansas, W. L. Schenck; Kentucky, J. N. McCormack; Louisiana, J. J. Bland; Maine, T. J. Foster; Maryland, T. A. Ashby; Massachusetts, H. P. Walcott; Michigan, H. B. Baker; Mississippi, Wirt Johnson; Missouri, H. H. Mudd; Minnesota, Perry H. Millard; North Carolina, T. F. Wood; Nebraska, J. O. Carter; New Jersey, I. N. Quimby; New York, T. M. Flandrau; New Hampshire, D. S. Adams; Ohio, C. G. Comegys; Oregon, W. D. Baker; Pennsylvania, W. T. Bishop; Rhode Island, H. R. Storer; New Mexico, F. H. Atkins; South Carolina, H. T. Horlbeck; Tennessee, J. Berrien Lindsley; Texas, J. Sears; Vermont, D. F. Rugg; W. Virginia, G. W. Baird; Virginia, — Ashton; Wisconsin, J. T. Reeve; Utah, F. S. Bascomb; U. S. Navy, W. D. Wolverton; U. S. Army, F. C. Ainsworth; U. S. Marine-Hosp. Service, J. A. Kinyoun.

Committee on Necrology—Alabama, G. E. Ketchum; Arkansas, L. P. Gibson; California, R. H. Plummer; Dakota, F. M. Crain; Connecticut, W. G. Brownson; District of Columbia, A. N. Acker; Florida, Neal Mitchell; Georgia, P. R. Courtleroy; Illinois, D. W. Graham; Indiana, J. F. Hubbard; Iowa, J. B. Ingals; Kansas, Chas. Gardner; Kentucky, H. M. Skillman; Louisiana, J. R. Matas; Maine, A. J. Fuller; Maryland, F. S. Latimer; Massachusetts, G. M. Garland; Michigan, G. E. Ranney; Mississippi, — Trimble; Missouri, J. E. Keft; Minnesota, W. W. Mayo; New Mexico, W. R. Tipton; Nebraska, — Galbreth; New Jersey, J. D. Hough; New York, John W. Brown; New Hampshire, J. W.

Parsons; Ohio, S. P. Deahofer; Oregon, — Shackelford; Pennsylvania, J. B. Walker; Tennessee, J. B. Murphy; Texas, W. Park; Vermont, E. R. Campbell; Virginia, M. L. James; W. Virginia, W. L. Wilson; Wisconsin, — Mackie; U. S. Navy, W. T. Hord; U. S. Army, J. R. Smith; U. S. Marine-Hosp. Service, Fairfax Irwin.

Committee to appoint Alternates in case any Vacancies occur in the Number selected to give a General Address—Wm. Brodie, J. H. Murphy, J. T. Morris.

Your Committee name as the place of next meeting Nashville, Tenn., and the time of meeting as the third Tuesday of May, 1890.

Chairman of Committee of Arrangements—W. T. Briggs.

Assistant Secretary—G. C. Savage, Nashville.

(Signed) P. O. HOOPER, Pres.

HENRY D. HOLTON, Sec.

On motion, the report was unanimously adopted and these officers were elected for 1890.

Dr. Culbertson, from the special committee on transportation of members to the sessions of the Association, reported a resolution making it the duty of the Permanent Secretary to secure from all railroads or other means of travel the lowest passenger rates for the sessions of the Association.

After discussion this was adopted.

On motion of Dr. Frank Woodbury the following preambles and resolution were unanimously adopted:

WHEREAS, It is of the utmost importance that the people of this country should enjoy the same advantages from the advances in materia medica, chemistry and pharmacy that are possessed by the people of Europe and other favored nations, and

WHEREAS, The patent laws of the United States appear to be so construed as to protect the foreign manufacturers and purveyors of chemical products, and to discriminate against domestic manufacturers by creating monopolies in the supply of certain new and valuable drugs; therefore be it

Resolved, That the American Medical Association hereby most respectfully petitions the Congress of the United States to instruct the appropriate committees to investigate this subject, to take testimony of any such discrimination, to compare the legislation on this subject of the leading Governments of Europe and the practical working of our own laws upon copyright, trade-mark, and any other protection afforded to foreign manufacturers of drugs in frequent use or to be used in the treatment of the sick, and to report such action as it may deem advisable to correct any abuses or injustice to American citizens, if they find such abuse or injustice really exists.

The following was offered by the Section on Ophthalmology:

Resolved, That the Ophthalmological Section respectfully desires the Association to authorize this Section to use what influence it can command to induce the Census Committee of the United States for 1890 to extend the tables relative to the blind and to tabulate to the greatest extent possible the causes of blindness.

On motion this was adopted.

The Section on State Medicine offered the following:

This Section has adopted the following Report of the Committee on Uniform Medical Legislation in the United States, and recommend that it be adopted, and that the Secretary of the Association transmit a copy of the Report to the Secretary of each State Medical Society, with the recommendation that each Society exert itself to secure the enactment of a law embodying the provisions of the Report.

Gentlemen of the Section on State Medicine:

Your Committee on Uniform Legislation have the honor to submit the following:

That, in our judgment, the best interests of the public will be subserved by the enactment of efficient medical legislation in every State in the Union.

That for the convenience of the profession and the stimulating effect on medical education in this country it is advisable to secure uniformity of legislation in the essential features of all Medical Practice Acts.

This Committee, therefore, begs to recommend as follows—that in future medical legislation the essential features of the enactment be as follows:

That all persons commencing the practice of medicine in any of its branches shall possess a license from the State Board of Medical Examiners.

That all candidates for a license shall submit satisfactory documentary evidence that he or she is a graduate in medicine of a medical institution in good standing with the said Board and having a curriculum possessing at least the following requirements:

First.—An entrance examination to test the student's fitness to become a practitioner. This examination shall include at least an examination in English grammar, composition, geography, history, arithmetic, algebra, physics, and the natural sciences; together with at least one of the following languages: Latin, French, or German, provided, however, that graduates of reputable colleges may be exempt from said examination.

Second.—Before granting a degree of M.D. or M.B., candidates for same shall have attended at least three full and regular courses of medicine of not less than six months' duration each.

All candidates for a license shall undergo an examination by the said Board of Medical Examiners upon the branches usually taught in medical colleges. Said examination shall be both scientific and practical, but of sufficient severity to test the candidate's fitness to practice medicine and surgery.

Said Board of Medical Examiners shall issue a license to only such persons undergoing an examination as may be deemed suitable persons to practice medicine. Said Board may refuse or revoke a license for the following named causes, to-wit: chronic and persistent inebriety, criminal abortion, or gross unprofessional conduct.

All licenses shall be recorded and made a matter of public record with the County Clerk, or Clerk of District Court, in the county wherein resides said person.

Said Board of Medical Examiners shall be appointed by the Governor, for a period not exceeding five years, the members thereof to be chosen from among the reputable practitioners of medicine of the State of not less than five years' residence.

On motion, the report was adopted.

The same Section offered the following :

It is recommended by the Section on State Medicine that the Committee on Collective Investigation of Disease, at present included in the Standing Committee on Meteorology, be discharged, and that the Committee on Meteorology be continued, with the direction to report to the Section on State Medicine at the next annual meeting of the Association.

On motion, this was adopted.

Dr. Frank Woodbury offered the following, which, on motion, was adopted :

WHEREAS, The American Pharmaceutical Association has appointed a Committee of Conference and sent a delegation to this Association,

Resolved, That this Association extends a cordial greeting to the representatives of the American Pharmaceutical Association, and invites them to a seat upon the platform, and

Resolved, That a Committee of Conference be appointed to meet the Committee of the American Pharmaceutical Association, for the consideration of subjects of mutual interest and benefit.

Resolved, That this Committee report on the second day of the next annual meeting of this Association the result of their conference, with such recommendations as they may deem advisable in the premises.

The Permanent Secretary read the following :

Your Committee on Dietetics beg leave to report : The special topic referred for investigation has been entertained and partially discussed at this session, but not so fully as to warrant a report at this time that will completely satisfy all the requirements of the subject. We therefore report progress and ask that the Committee be continued.

(Signed) E. A. Wood, Chairman.

The report was received and the Committee were continued.

Dr. A. L. Gihon offered the following amendment to the By-laws :

That the first day of the meeting of this Association shall be on the first Wednesday of May or June, respectively, instead of Tuesday.

Laid over until next meeting.

The Section on Practice of Medicine offered a resolution, that the President appoint three delegates to attend the Convention to revise the Pharmacopœia, which meets in May, 1890. This was adopted.

The Association adjourned until Friday at 10 A.M.

FOURTH DAY, JUNE 28.

The President called the Association to order at 10 A.M.

Prayer was made by Rev. D. A. Jordan.

Dr. Storer in making the final announcements, took occasion to thank the Association for the many kindnesses they had shown the committee.

The Permanent Secretary read the report of the Librarian, which will appear in a future issue, with a recommendation that the usual appropriation of \$10 be made for the *Index Medicus*.

On motion of Dr. Davis the report was accepted and the appropriation was made.

The Address on State Medicine was then delivered by Dr. W. H. Welch, of Maryland. (See page 73.)

On motion of Dr. J. B. Hamilton the address was referred for publication, with thanks to the author for his very able, instructive and entertaining paper.

The President appointed as the committee to confer with the Social Science Association Drs. C. G. Comegys, Ohio ; J. B. Hamilton, U. S. Marine-Hospital Service, and A. M. Owen, Maryland.

By request of the Section on State Medicine the Committee on Fœticide was discharged.

The President appointed as the committee to confer with the American Pharmaceutical Association : Drs. G. E. Frothingham, Mich. ; J. C. Culbertson, Ohio ; Frank Woodbury, Pa. ; Isaac N. Love, Mo. ; F. C. Shattuck, Mass.

As the delegates to the Convention for revision of the Pharmacopœia : Drs. H. A. Hare, Pa. ; N. S. Davis, Jr., Ill. ; Elmer Lee, Mo.

Dr. X. C. Scott, Ohio, offered an amendment to the By-laws abolishing the Committee on State Medicine inasmuch as the Section on State Medicine occupies the entire ground.

This will lie over till next year.

On motion of Dr. N. S. Davis, the President was requested to appoint a committee to take charge of the procuring excursion rates, and to select the most feasible route to the Tenth International Medical Congress in Berlin. Committee : Drs. W. H. Pancoast, Pa., J. B. Hamilton, D. C., A. N. Bell, N. Y., A. H. Beidler, Md. ; N. S. Davis, Ill.

The Permanent Secretary read the following names as appointed to attend the British Medical Association in Europe during 1889 : Drs. A. J. Fuller, Me. ; E. Cutter, N. Y. ; P. O. Hooper, Ark. ; J. H. Knight, Ct. ; I. N. Love, Mo. ; J. M. Mathews, Ky. ; W. C. Wile, Ct. ; W. F. Hutchinson, R. I. ; A. N. Owen, Ind. ; I. N. Quimby, N. J. ; J. W. Jackson, Mo. ; F. J. Lutz, Mo. ; S. E. Solly, Col. ; J. F. Noyes, Mich. ; J. M. French, Ohio ; A. Segur, N. Y. ; D. A. Hengst, Pa. ; J. Taber Johnson, D. C. ; R. H. Plummer, Cal.

To the Canadian Medical Association, Dr. P. S. Conner, Ohio.

To the International Medical Congress to be held in Berlin in 1890: Drs. J. B. Hamilton, D. C.; J. F. Noyes, Mich.; F. Woodbury, Pa.; W. W. Keen, Pa.; A. J. Fuller, Me.; E. Cutter, N. Y.; X. C. Scott, Ohio; W. H. Pancoast, Pa.; W. F. Waugh, Pa.; E. H. M. Sell, Pa.; J. Taber Johnson, D. C.; J. M. French, Ohio; N. S. Davis, Ill.; A. P. Clarke, Mass.; Chas. S. Wood, N. Y.; A. H. Wilson, Mass.; James Collins, Pa.; R. H. Plummer, Cal.

On motion of Dr. J. B. Hamilton, it was resolved that the American Medical Association hereby expresses its profound sympathy with the unfortunate citizens of the city of Johnstown, Pa. and vicinity, and especially with the members of our profession therein residing, and that as a mark of our sympathy the treasurer be instructed to remit the dues for the ensuing year of any member of this Association living in said place.

Dr. J. M. Toner submitted his report as Chairman of the Committee on Necrology.

OFFICERS OF SECTIONS.

The Sections reported their officers as follows: *Practice of Medicine, etc.*—J. H. Musser, Pa., Chairman; H. McColl, Mich., Secretary.

Surgery and Anatomy.—B. A. Watson, N. J., Chairman; J. B. Deaver, Pa., Secretary.

Obstetrics and Diseases of Women.—W. W. Potter, N. Y., Chairman; J. Hoffman, Pa., Secretary.

State Medicine.—John B. Hamilton, D. C., Chairman; F. S. Bascum, Utah, Secretary.

Ophthalmology.—S. C. Ayres, Ohio, Chairman; E. J. Gardner, Ill., Secretary.

Laryngology and Otology.—John O. Roe, N. Y., Chairman; Frank H. Potter, N. Y., Secretary.

Diseases of Children.—Isaac N. Love, Mo., Chairman; E. F. Brush, N. Y., Secretary.

Medical Jurisprudence.—T. B. Evans, Md., Chairman; L. Crothers, Ct., Secretary.

Dermatology and Syphilography.—I. E. Atkinson, Md., Chairman; W. T. Corlett, Ohio, Secretary.

Oral and Dental Surgery.—J. L. Williams, Mass., Chairman; E. S. Talbot, Ill., Secretary.

W. B. ATKINSON, M.D., Secretary.

Dear Sir:—It is with great regret that I am compelled to decline the office of Chairman to the Section of Dermatology and Syphilography to which I have been elected. Deeply grateful for the high honor paid me by the Section, I remain, your very obedient servant,
June 27, 1889. I. E. ATKINSON.

Several Sections reported their minutes and papers, which were referred to the Trustees for publication.

On motion of Dr. W. L. Schenck, it was

Resolved, That the thanks of the Association be tendered to Dr. H. R. Storer, Chairman, and the members of the Committee of Arrangements; to the Profession of Newport and of Rhode Island for the courtesies so liberally extended during the session; to His Honor, Mayor Thomas Coggeshall, and the City Council; to Rev. Dr.

Thayer, Right Rev. Bishop Clark, Rev. Jas. Coyle, and Rev. D. A. Jordan; the Trustees of the Newport Hospital; the Newport Historical Society; the Redwood Library; the People's Library; the Rev. Rabbi Mendes; the Trustees of the Channing Memorial Church; Mr. H. Bull, Jr., for the use of the Opera House; the Business Men's Association; Capt. J. Waters, Asst. Sup't Third Life Saving Station; Commander C. F. Goodrich, U. S. Navy; Commander F. J. Higginson, U. S. Navy; Col. John Mendenhall, U. S. Army; to His Excellency, Herbert W. Ladd, Governor of Rhode Island; the Rhode Island Medical Society; Hon. Geo. Bancroft, who gave 400 roses for every lady accompanying the delegates; the Medical Faculty of Harvard University; and to Lewis Brown, the Postmaster of Newport.

Dr. W. H. Pancoast offered a vote of thanks to Sir James Grant, M.D., of Canada, for his admirable address and desire to express our pleasure in having him with us. We will always welcome cordially our British Medical brethren.

This was carried by a rising vote.

Sir James Grant replied to the sentiment.

The President elect having been called away, his installation was necessarily postponed.

President Dawson then arose and declared the Association adjourned to meet in Nashville, the third Tuesday in May, 1890.

W. B. ATKINSON,
Permanent Secretary.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Dr. Jacobi reads some Notes on the Baking of Bacilli, at the Academy of Medicine—Dr. John C. Peters reports for the Committee on Croton Water Nuisances—Mr. R. H. Robertson exhibits and describes the plans of the New Academy Building—Commencement Exercises at the College of Physicians and Surgeons—The Presidency of the Board of Health—The Election of Dr. E. M. Moore, of Rochester, N. Y., as President of the American Medical Association, received with enthusiasm.

It was not expected that there would be any scientific exercises at the last meeting of the Academy of Medicine before the summer vacation, but on account of special circumstances and the importance of the subject, Dr. Jacobi was given the privilege of reading some "Notes on the Baking of Bacilli." It will perhaps be remembered, in this connection, that a few months ago Dr. Louis Weigert's hot air inhalation apparatus was exhibited at a meeting of the Section on Practice of the Academy, and a very rose-colored account given of the wonders accomplished by it. Having stated that of late the inhalation of dry hot air in pulmonary tuberculosis had attracted considerable attention, Dr. Jacobi made some remarks strongly condemnatory of all pat-

ented apparatuses and processes in medicine; and then went on to say that Weigert's apparatus, which has been patented, was quite imperfect in its mechanical construction and, in addition to its other objections, was sold at a very high price.

He stated that the attention of the profession was first directed to the use of dry hot air in phthisis by Dr. Louis Halter, in an article published in two numbers of the *Berliner Klinische Wochenschrift* in September, 1888, and accompanied by a representation of an apparatus which he had devised. Halter's attention was first drawn to the matter by the exemption of lime-kiln workers from tuberculosis, and his observations, extending over a period of fifteen years, were made in Westphalia, where this disease was very prevalent among the general population. The air about the ovens is quite dry and very hot, the thermometer usually ranging from 122° to 158° F. Such air must, therefore, be for the most part free from tubercle bacilli, which, as is well known, perish at a temperature of from 140° to 149° F. The air about the lime-kilns is also greatly rarefied, and it has the effect in the case of newcomers of increasing the body temperature 2.5° above the normal, while the pulse is raised to 120 to 160, and the respiration to 20 to 80. Old hands, however, perspire very freely, and feel perfectly well.

Another paper on the inhalation of dry hot air in phthisis was also published in the *Berliner Klinische Wochenschrift* in September, 1888, by Dr. E. Krull, and this was also accompanied by a representation of an apparatus devised by the author. It was not until December of the same year that Dr. Louis Weigert published an account of his apparatus in the *New York Medical Record*, and in his communication he made no mention whatever of the articles of Drs. Halter and Krull. About the same time he also exploited his apparatus in the public press, proclaiming himself worthy to be considered the equal of Koch by reason of his great invention, by means of which consumption was entirely curable.

Dr. Jacobi then went on to say that he had experimented with the Weigert apparatus to a considerable extent in his wards at Bellevue Hospital, and that the results had not been at all satisfactory. It was true that, in many of the cases, more or less improvement was noted while it was being used; but it was a well established fact that every patient coming to the hospital with phthisis, except the disease is in its last stages, improves for a time after entrance, on account of the nutritious diet, rest, freedom from care, etc. He found by repeated observations that the temperature of the air to be inhaled from the apparatus was always many degrees cooler by the time it had passed through the tube conveying it to the mouth of the patient than it was when it left the cylinder where it was heated. In addition, the temperature of the air was further reduced in the

pharynx and trachea, and when the proportionately small amount remaining finally reached the great volume of the blood and was diffused over the extended surface of the lungs, it was still more cooled down. In fact, the expired air was warmer than the inspired air. When it was remembered, furthermore, that the bacilli were located and multiplied deep in the tissues, it seemed hardly probable that they were disturbed at all; and it was not even likely that the soft lung tissue could be heated above normal, while neither the pulse or the general temperature of the body showed any alteration. It was evident, therefore, that in order to destroy the bacilli something more was required than the inhalation of hot air in an ordinary room. The temperature of the apartment in which the inhalations were given ought to be at least 108° . The men working at the lime-kilns mentioned by Halter were subjected to a temperature varying from 106° to 158° .

Both the hot inhalations and the hot room, Dr. Jacobi said in conclusion, would find their contraindications in all cases where the patients were weak or liable to hæmoptysis, and could only be employed with safety, therefore, where the patient was comparatively robust. He believed, consequently, that this method of treatment should be resorted to only in the very earliest stage of phthisis. In the cases in which he had used the hot inhalations, other causes, as he had mentioned, would account for the improvement where any improvement was noted. In a few he found it difficult to control the cough excited by the treatment, and in two instances it caused so much vomiting, with other disagreeable symptoms, that the patients were decidedly relieved by the discontinuance of the inhalations.

Dr. John C. Peters, chairman of a committee appointed at the last meeting in regard to Croton water nuisances, reported that the committee had made an earnest appeal to the Department of Public Works, which, it seems, is legally responsible in the matter, for the prompt suppression of all nuisances existing along the Croton watershed. The inhabitants of a considerable part of three counties are apparently constantly engaged in polluting the water-supply of New York, and attention has been emphatically directed to the abuse in the report published by the State Board of Health last winter; a thorough investigation having been made during the latter part of last year, in response to an application by Mayor Hewitt to this Board.

A similar investigation was made in behalf of the City Board of Health in 1884. There was much discussion at that time as to what should be done about the matter, and legislation has since been obtained to enable the public authorities to put a stop to the nuisances. It was not reassuring to find, when the result of the investigation of the State Board of Health was pub-

lished, that the nuisance was not only unabated, but had gone on steadily increasing with the growth of villages, the multiplication of summer resorts, and the increase in industries in the valleys of the Croton district. Where Mr. Lucas, who made the former investigation, found 1,879 houses draining into the streams which fed the Croton in 1884, Mr. Brown, the engineer for the State Board of Health, found 2,843 in 1888. Barns and barnyards have also multiplied, and the refuse of a growing population and an increasing number of domestic animals, together with the foul waste of mills and factories, is poured into the Croton water in a constantly swelling volume.

The State Board of Health followed its investigation by formulating "Rules and Regulations for the Sanitary Protection of the Croton River and its Tributaries," but as it had no legal authority to enforce these rules, nothing whatever has been done about the abatement of the nuisance. A determined effort is therefore to be made to induce the Commissioner of Public Works, who alone, under the existing laws, has the power to do so, to take such action as will remove the present sources of pollution and keep the water-supply pure in the future.

On this occasion Mr. R. H. Robertson, the architect, who, by the way, is a son-in-law of Prof. T. M. Markoe, exhibited and described the plans of the new Academy building, which is to occupy a lot 75 feet wide and 100 feet in depth on Forty-third St., near Fifth Avenue. It will be five stories in height, with a gable story, and is to be constructed of brick and a handsome reddish-brown stone known as Longmeadow stone. On the first floor in front are to be a smoking-room 36 by 26 feet and other smaller rooms, and in the rear the large assembly room, 57 by 42 feet, and a handsome dining-room, 31 by 26 feet. These two rooms will be separated by a rolling partition, so that they can be thrown into one at any time when required for large meetings or a largely attended dinner. One and a half stories will be taken up by this part of the building, and the rooms will be 26 feet in height. The half-story in front, 11 feet in height, is to be used for committee-rooms, etc. On the next floor will be the reference library and the stack-room, occupying a story and a half, with three reading-rooms, of less height, in front. The full capacity of the stack-room will be for 230,000 volumes, to accommodate which there will eventually be three tiers of stacks. At first, however, but a single tier will be required by the library. The next floor will be taken up by four section rooms, each with an anteroom and specimen or apparatus room, and accommodating respectively 160, 225, 225 and 110 persons. In the top story, which will not extend over the entire area of the building, will be a microscope room and librarian's apart-

ments, and the rest of the space will be devoted to an open deck, which will probably be fitted up as a summer garden. After the meeting there was a social reunion, with a collation, and the loving cup was passed merrily around.

At the recent Commencement of the College of Physicians and Surgeons the graduating class numbered 166, the largest in the history of the College. Professor James W. McLane, through whose instrumentality the munificent gifts of the Vanderbilts to the institution were mainly secured, has been selected for the Presidency, made vacant by the death of the lamented Dalton, and Prof. T. M. Markoe appointed Vice-President of the College.

Much indignation was felt by the profession at the appointment by Mayor Grant, a short time since, to the Presidency of the Board of Health, of Mr. Charles G. Wilson, a man without experience and, so far as known, utterly without knowledge in sanitary matters, in the place of Mr. Bayles, an expert, and one who has filled the duties of the position in the most admirable manner. This feeling found voice in a resolution introduced at a recent meeting of the Academy of Medicine by Dr. Walter Mendelson, to the effect that, in the opinion of the Academy, the appointment to the Presidency of the Board of Health of any one not specially qualified is fraught with possibilities of the gravest danger to the public health; and furthermore, that the Academy, having at heart the public good, urges the Mayor to reconsider the appointment and, after due consultation with those acquainted with the duties of the office, make a new appointment better suited to the important nature of the department.

In the preamble it is set forth that the Board of Health is a department of the City Government in which every member of the community is most personally and vitally interested, and one where it is absolutely necessary for true efficiency that the presiding officer be acquainted with sanitary science and have a knowledge of the laws of health and of disease; that the medical profession, as guardian of the health of the community, is being brought into daily contact with the workings of the Board of Health, and therefore especially interested in its efficiency; and that the Mayor of the City of New York has appointed to the Presidency of the Board one whose previous experience nowise justifies the belief that he is at all fitted to assume the grave responsibilities of the office intrusted to him.

It was deemed best before submitting the resolution to the vote of the Academy, that it should be referred to the Council for mature consideration, and therefore no definite action will probably be taken in the matter before autumn. There is, however, a growing feeling that the possibility of the appointment of an utterly incompetent President of the Health Department of a city like New

York is an outrage upon the community, and it is probable that urgent efforts will be made to induce the next Legislature to amend the present law in such a way that no one can be appointed to this position who is not a doctor of medicine or an expert in sanitary science. As the law now stands, strangely enough, no physician is eligible to the Presidency, and the great medical profession of New York is entitled to but one representative as Commissioner in the Board of Health; so that our medical men feel that it is time that they should claim some right to proper recognition in a body with which their profession has so much to do and with the interests of which it is so closely identified.

The election of Dr. E. M. Moore, of Rochester, as President of the American Medical Association meets with much enthusiasm here, and, aside from the fact that nowhere in the profession could there be found one more eminently qualified by natural gifts and special culture to fill the position with dignity and grace, it is felt that the selection is in some sense a recognition of the loyalty of that portion of the New York profession which has always stood true to the National colors, and of which Professor Moore is one of the most distinguished ornaments. In this connection it may be stated that the continued prosperity of our State Association, of which Dr. Moore was the second President, is sufficiently attested by the last excellent volume of *Transactions*, recently issued under the admirable editorship of Dr. Carroll; while the New York County Medical Association has never been so flourishing as at present, about a hundred new members, including many prominent physicians, having been added within the last four months.

P. B. P.

MISCELLANY.

DR. JOHN S. BILLINGS AND THE ELEVENTH CENSUS.

—Through an oversight the following circular to the profession, issued by the Superintendent of the Eleventh Census, was omitted at the proper date. The attention of our readers is especially directed to the instructions contained therein: "The various medical associations and the medical profession will be glad to learn that Dr. John S. Billings, Surgeon U. S. Army, has consented to take charge of the Report on the Mortality and Vital Statistics of the United States as returned by the eleventh census. As the United States has no system of registration of vital statistics, such as is relied upon by other civilized nations for the purpose of ascertaining the actual movement of population, our census affords the only opportunity of obtaining near an approximate estimate of the birth and death rates of much the larger portion of the country, which is entirely unprovided with any satisfactory system of State and municipal registration. In view of this, the Census Office, during the month of May, this year, will issue to the medical profession throughout the country 'Physicians' Registers' for the purpose of obtaining more accurate returns of deaths than it is possible for the enumerators to make. It is

earnestly hoped that physicians in every part of the country will cooperate with the Census Office in this important work. The record should be kept from June 1, 1889, to May 31, 1890. Nearly 26,000 of these registration books were filled up and returned to the office in 1880, and nearly all of them used for statistical purposes. It is hoped that double this number will be obtained for the eleventh census. Physicians not receiving registers can obtain them by sending their names and addresses to the Census Office, and, with the register, an official envelope which requires no stamp will be provided for their return to Washington. If all medical and surgical practitioners throughout the country will lend their aid, the mortality and vital statistics of the eleventh census will be more comprehensive and complete than they have ever been. Every physician should take a personal pride in having this report as full and accurate as it is possible to make it. It is hereby promised that all information obtained through this source will be held strictly confidential.

ROBERT S. PORTER, Sup't of Census.

MEDICAL SOCIETY OF VIRGINIA.—The twentieth annual session of this Society will convene in Roanoke, Va., Tuesday, Sept. 3, 1889, at 8 P.M. Special attention is called to the following resolution adopted 1884:

"*Resolved*, That the Secretary be instructed to send out a notice to each member of the Society two months in advance of the day of meeting calling for the titles of any papers to be read before the Society—said titles to be returned to the Secretary at least five weeks before the day of session—failure in which will relegate any papers to the last day of the session; that the Secretary shall classify such titles according to subjects, and, in publishing his programme, assign all papers on or pertaining to the same classification (such as Surgery, Diseases of Women, etc.) to be read the same day, specifying the day, with a limit of one-half hour to each paper; and fifteen minutes for each discussion, unless this time is extended by a two-thirds vote of those present."

The subject for general discussion is "Croupous Pneumonia," Dr. B. L. Winston, of Hanover C. H., Va., Leader. Parties preparing papers on this subject should notify the Secretary. Circular announcement will be issued about a month hence. Send applications for Fellowship, with name and post-office in full, name of college, and date of graduation in medicine, date of passing examination successfully before Medical Examining Board of Virginia, name of a Fellow who recommends the applicant, and \$2.00 initiation fee, to the Recording Secretary, Landou B. Edwards, M.D., Richmond, Va.

THE MEDICO-LEGAL SOCIETY has issued the following circular:

NEW YORK, JUNE 20, 1889.

Dear Sir:—The recent session of the International Congress of Medical Jurisprudence was successful beyond the most sanguine expectations of its promoters. It perfected a permanent organization and provided for the selection of an additional Vice-President from each State and Territory of the American Union, and from each foreign province, State and country who had members in the organization who took an interest in the success of the movement.

Future meetings were authorized to be called by the executive officers, a list of whom is herewith sent you.

The expenses of publishing all the papers read at this Congress, with a record of its transactions and the proceedings at the banquet, will fill a large volume, the expense of which it is estimated will be about \$700. The executive officers were authorized to elect additional members into the organization, the only expense of which is the enrolling fee of \$3, which entitles the members to the Bulletin free.

Will you unite in this movement with a view of making it International, and will you suggest a suitable name for Vice-President from your State, Territory, province

or country. If this effort is received with favor by the members of the Medico-Legal Society, active, corresponding and honorary alone, without counting others, it will at once provide for the publication of the transactions and the papers read before the Congress, and lay on firm and sure foundations the International work of promoting the advancement of medical jurisprudence, not alone in the United States of America, but throughout the civilized world.

Your coöperation in this effort is earnestly solicited in your locality, and your name will be laid before the executive officers for enrollment as a member on receipt of the enrolling fee, which can be sent to any officer of the body.

The officers elected by the Congress, held June 4 to 7, 1889, in New York, were as follows: President—Clark Bell, Esq., of New York. Vice-Presidents—Chief Justice Sir John C. Allen, of New Brunswick; Chief Justice Edward F. Bermudez, of Louisiana; Dr. Bettincourt Rodrigues, for Portugal; Gov. Biggs, of Delaware; Dr. Daniel Clark, of Toronto, Canada; Ex-Chief Justice Noah Davis, of New York; Dr. Edward J. Doering, of Illinois; Prof. John J. Elwell, of Ohio; Judge W. H. Francis, of Dakota Ter.; Dr. W. W. Gedding, of Washington, D. C.; Dr. Eugene Grissom, of North Carolina; Dr. Carl H. Horsch, of New Hampshire; Judge Locke E. Houston, of Mississippi; Dr. Charles H. Hughes, of Missouri; Dr. W. W. Ireland, of Scotland; Prof. Robt. C. Kedzie, of Michigan; Dr. Norman Kerr, of England; Dr. Jules Morel, of Belgium; Dr. Jennie McCowen, of Iowa; Dr. Connolly Norman, of Ireland; Prof. John J. Reese, of Pennsylvania; Judge H. M. Somerville, of Alabama; David Stewart, Esq., of Maryland; Theo. H. Tyndale, Esq., of Massachusetts. Secretary—Moritz Ellinger, Esq., of New York. Assistant Secretaries—Dr. Frank H. Ingram, of New York; Dr. Wm. J. Lewis, of Connecticut; J. F. Walters, of New York.

The President was empowered and directed by the Congress to appoint additional Vice-Presidents for the various States, Territories, provinces and countries, which will be done during the summer vacation. Members of the Congress receiving this circular, who have not sent their enrolling fee, will please do so, and circulate this among those who take an interest in the science.

Your early response is requested to either of the undersigned.

CLARK BELL, President,
MORITZ ELLINGER, 57 Broadway, New York.
Surrogate's Office, New York City.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.—At a meeting of the General Committee, at Newport, it was decided to change the date of meeting of this Association to September 10, 11, and 12, 1889. This promises to be the largest and most interesting meeting in the history of this Association. A large attendance of representative men from all parts of the United States has been assured.

LETTERS RECEIVED.

Dr. O. D. Haven, Allegheny, Pa.; Dr. Henry W. Elmer, Bridgeton, N. J.; E. M. DePuy, Washington; Dr. S. L. Holley, Nanticoke, Pa.; Dr. C. Park, Oquaque, Ill.; Dr. F. B. Schulz, Cape Girardeau, Mo.; Jerome Kidder Mfg. Co., New York, Dr. C. A. Harvey, New York; Dr. Richard J. Duglison, Philadelphia; Dr. J. A. Dibrell, Jr., Little Rock, Ark.; Dr. W. N. Miller, Pittsburgh, Pa.; Dr. Charles Disen, Minneapolis, Minn.; Dr. W. VanHook, Chicago; Dr. I. B. Ellis, Bethany, Mo.; Malted Milk Co., Racine, Wis.; Dr. James E. Morgan, Washington; Dr. Wm. C. Dabney, White Sulphur Springs, Ky.; Dr. Joseph Price, Philadelphia; Dr. N. P. Dandridge, Cincinnati, O.; W. L. Minter, Louisville, Ky.; Medical Herald Co., St. Joseph, Mo.; Dr. G. K. Dickinson, Jersey City, N. J.; J. F. Widman, McGregor, Ia.; Dr. J. F. Page, Powersville,

Mo.; Dr. Thos. Cosgrove, Auburndale, O.; Dr. F. G. Albright, Lancaster, Pa.; Dr. W. H. Landis, Woodland, Mich.; Dr. G. W. H. Kemper, Muncie, Ind.; Dr. Horace M. Starkey, Chicago; Dr. J. C. Hoag, Chicago; Galvano Faradic Mfg. Co., New York; Dr. G. R. Wells, Gold Hill, Col.; Dr. A. L. Hummel, Philadelphia; Dr. J. W. Long, Bryan, O.; Dr. J. T. Jelks, Hot Springs, Ark.; Dr. A. P. Brown, Fort Worth, Tex.; Dr. Joseph Eastman, Indianapolis, Ind.; Dr. David Barrow, Lexington, Ky.; Dr. J. B. Murdoch, Pittsburgh, Pa.; G. H. Mitchell & Co., Cedar Rapids, Ia.; Dr. W. T. Lusk, Brooklyn, N. Y.; Dr. A. M. Owen, Evansville, Ind.; Fred. D. Van Horen, New York; Dr. Gersham H. Hill, Independence, Ia.; Dr. H. R. Storer, Newport, R. I.; Dr. Albert F. Stifel, Wheeling, W. Va.; Dr. W. I. Haddens, St. Joseph, Mo.; Publishers' Commercial Union, Chicago; Dr. A. R. Stewart, Toledo, O.; Dr. J. G. Truax, New York; Dr. G. F. Smolt, Nickerson, Kan.; Dr. J. W. Muenich, Jefferson, Wis.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from July 6, 1889, to July 12, 1889.

By direction of the acting Secretary of War, the retirement from active service this date, by operation of law, of Col. Thomas A. McParlin, Surgeon, under the provisions of the Act of Congress approved June 30, 1882, is announced. Col. McParlin will repair to his home. Par. 2, S. O. 157, A. G. O., July 10, 1889.

Major H. O. Perley, Asst. Surgeon U. S. Army, is ordered to accompany troops from Ft. Wayne, Mich., to Gognac Lake, Mich., to encamp there with the Michigan State troops from August 8 to 13, 1889. Par. 1, S. O. 154, Hdqrs. Div. of the Atlantic, July 9, 1889.

Capt. H. O. Perley, Asst. Surgeon U. S. Army, is granted fourteen days' leave of absence, to commence about July 14, 1889. Par. 2, S. O. 154, Hdqrs. Div. of the Atlantic, July 14, 1889.

Col. Andrew K. Smith, Surgeon U. S. Army, promoted to Surgeon with rank of Colonel, to rank from July 10, 1889. Vice McParlin, retired.

Lieut.-Col. Francis L. Town, Surgeon U. S. Army, promoted Surgeon, with rank of Lieut.-Colonel, to rank from July 10, 1889. Vice A. K. Smith, promoted.

Capt. W. C. Gorgas, Asst. Surgeon, is granted leave of absence for one month, to take effect on the arrival of a medical officer to relieve him. Par. 2, S. O. 84, Hdqrs. Dept. of the Missouri, July 3, 1889.

By direction of the Secretary of War, Capt. Andrew V. Cherbonnier, Medical Storekeeper, will, in addition to his present duties, take charge of the office and perform the duties of acting Assistant Medical Purveyor in St. Louis, Mo., during the absence of Capt. George T. Beall, Medical Storekeeper. Par. 2, S. O. 151, A. G. O., July 2, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending July 13, 1889.

Asst. Surgeon S. Stuart White, ordered to the Naval Hospital, Brooklyn, N. Y.

Medical Inspector C. H. White, detached from the "Trenton" and wait orders.

P. A. Surgeon Ernest Norfleet, detached from the "Trenton," and to the "Monocacy."

P. A. Surgeon H. E. Ames, detached from the "Monocacy," proceed home and wait orders.

Surgeon G. E. H. Harmon, detached from the "Constellation" and to the Naval Academy.

Asst. Surgeon C. H. T. Lowndes, detached from the "Constellation" and to the Naval Academy.

Surgeon H. P. Harvey, detached from the "Vandalia" July 7, proceed home and wait orders.

Asst. Surgeon S. Stuart White, detached from the "Trenton" July 7, 1889.

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ORIGINAL ARTICLES.

THE TREATMENT OF SALPINGO-OVARITIS BY ELECTRICITY.

Being a paper prepared for the Gynecological Section of the American Medical Association Meeting at Newport, June 27, 1889.

BY GEORGE APOSTOLI, M.D.,
OF PARIS.

The electrical treatment of fibroma which I originated has made great strides despite the railings of charlatans and incompetent persons; it is not necessary to refer to this subject again, because it is a child that will grow of itself, and is amply able to take care of itself. To-day I invite your attention to a subject of equal interest, I mean the treatment by electricity of salpingo-ovaritis, and I sincerely hope that it may have the same useful future, more restricted perhaps, because at present it is restricted to a certain number of cases, but in any case worthy of your consideration.

Salpingo-ovaritis is a disease which has long been recognized, but under names which I have changed very often: *Phlegmon*, *pelvic-peritonitis*, *lymphangitis*, *adeno-lymphangitis*, *cellulitis*, *peri-metritis*, *para-metritis*, *peri-uterine*, *phlegmasia*, etc.; all of these titles being used to picture a disease originating in the lymphatics, in the cellular tissue, or in the peritoneum, according to the special pathological views of the individual describing the malady. Laparotomy had the advantage of fixing the diagnosis precisely, by demonstrating that lesions of the ovary and of the tube were almost constant factors, and that these inflammations almost always took origin in the lining membrane of the uterus, and from there spread to the adnexa, the cellular tissue, and the peritoneum. At the commencement of my practice I fell into the common pathological error, which I hasten to correct to-day: But one fact is beyond dispute, and that is that the conditions which I then treated as *phlegmon*, and *peri-metritis*, and which concealed a *salpingo-ovaritis*, does not militate in the least against my claim to priority in the electrical handling of the disease under discussion.

Since 1882 I have treated all cases that come to my clinic by electricity, whether suffering from

tumors, from endometritis, or peri-uterine phlegmasia. Look for a moment at the thesis of my assistant, Dr. L. Carlet, which appeared in July, 1884,¹ and which I myself revised thoroughly: "One pole (the negative) is that of *denutrition par excellence*; it is suitable, therefore, not only for tumors, but for sub-acute peri-uterine inflammations (circumscribed), without fever, which are connected with the uterus, and which considerably disturb its functions." Farther on, you may read with profit the clinical histories of twenty cases² of peri-uterine phlegmasia, complicating uterine tumors, which were treated with electricity. I quote as follows, (page 110). "This observation is of the greatest importance, because it shows the value of intra-uterine galvano-caustique in moderate doses, in causing a resolution of sub-acute peri-metritis." Further on I wrote: "This observation (page 117) should be of great importance, since it shows, first, that intra-uterine galvano-caustique, badly done, or made unduly painful, may set up multiple accidents, and here, the peri-uterine phlegmasia is clearly due to the last application. On the other hand, this observation also proves, that hysterometry, badly done, is dangerous, but when well done is never so, even in the sub-acute stage of peri-uterine phlegmasia; this same malady, indeed, has been treated with uterine faradization (that is by another form of hysterometry), during the convalescent stage of a phlegmon of the broad ligament, which resulted in a complete cessation of symptoms after a very short treatment."

From 1884 to 1887, my experience has enlarged coincidently with greater skill, boldness in operating, and at the Dublin Congress (August, 1887), I discussed the question under an entirely new caption. (See *Bulletin général de Thérapeutique*, of September 30, 1887, and *British Medical Journal*, of November 19, 1887). To-day the names have changed, but the ideas are the same, and I propose giving you the results of my electrical treatment. I shall speak no more of *peri-metritis*, but of *salpingo-ovaritis*, whether complicating a pelvic peritonitis or not. The atti-

¹ Du traitement électrique des tumeurs fibreuses de l'utérus d'après la méthode du Dr. Apostoli par le Docteur Lucien Carlet. Paris. Octave Doin, Editeur. 1884.

² See observations (op. cit.) on pages 74, 81, 85, 94, 106, 114, 120, 123, 124, 151, 169, 196, 205, 214, 216, 225, 227, 232, 236, 241.

tude of those doctors who occupy different and opposing ground, is very curious, and may, briefly, be described as follows: the large number, following in the footsteps of a wise ancestry, when confronted with a salpingo-ovaritis, exclaim, "Do not touch it." They ignore all intra-uterine interference, relying upon poultices and revulsives. Their success is variable. The cavity of the uterus is, for them, a *noli me tangere*, which they religiously avoid. Others, on the contrary, comprising a small number of surgeons, anxious of statistical fame, open the abdomen of every woman having an undue sensitiveness of the adnexa, either for exploration or castration. Here the abuse cries out for reform, and if, under some circumstances, the services of the surgeon are indispensable, yet here, one may justly exclaim with indignation, that in many cases, surgery, out of selfishness, consigns a woman to a future of sterility. The true path, gentlemen, lies between the two extremes. If, on the one hand, doctors are over-timid, and count too largely upon nature to cure certain diseases, which almost never, are spontaneously cured, on the other hand, surgeons commit a fault quite as reprehensible, by hasty operations; for we know now that castration sometimes kills, and does not always cure, forgetting that, clinically speaking, these cases are frequently curable by more simple and conservative means, without causing an irreparable physical and moral shock to the woman.

From the very commencement, despite the prejudice from all sides, my treatment of these cases has been absolutely and entirely the intra-uterine electric. This idea, at first theoretic, is to day a fixed fact, thanks to pathological investigation which demonstrates that almost all cases of peri-uterine phlegmasia or salpingo-ovaritis, have their starting point in an endometritis, which is often the posthumous witness of the secondary lesion of propagation, cleanse the uterus, make use of intelligent intra-uterine antiseptics, cure the endometritis, and provoke healthy intra-uterine derivation—such are the general considerations that have guided me on to such results. These are the reasons why, at the very first, I swept away the existing prejudices against an interference with the uterine cavity, and why I went at once to the bottom no matter what might be the extent of the phlegmasia. It is true, I associated, in this therapeutics, faradization with galvano-chemical caustique. Faradization, in the form of a current of tension, calms the nervous system, diminishes excitability and relieves pain; but, of itself, is often insufficient to arrest the acute phlegmasia. The dynamic action in the commencement of inflammatory conditions is purely calmative, and will aid in the resolution of old exudates. I have associated three orders, of procedure, which, in inverse order of merit, are faradism, intra-uterine galvanism and vaginal

peripheric galvano-puncture. I will briefly sum up my views of each.

1. Faradization, under the form of a current of tension, made by the long thin wire, calms the nervous system, moderates its excitability, assuages or cures pain, but is often powerless to arrest an acute phlegmasia; its action is purely dynamic, and it acts, as opium acts, during early inflammatory stages, but is powerless to arrest the evolution of inflammatory processes. The current (faradic) of tension is the only one tolerable and indicated in acute and subacute forms. A current of quantity is less efficacious and less tolerable, except in rare cases of chronic exudates where, in acting upon the interstitial circulation, it aids reabsorption to a certain extent. The electrode should generally be the bipolar, to better localize the electric action, either in the vagina or in the uterus. All other things being equal, the uterine application is by far the most useful. The application should be in moderate doses without shock, and more gentle as the inflammation is more active. The séances should be daily at first, lasting from five to twenty minutes, and the dose progressively augmented as the patient can bear it.

2. Galvanization, or rather intra-uterine chemical caustique, is much more powerful than faradization, and will often be sufficient of itself in cases of ovaro-salpingitis. It is a most excellent way of changing in part or in whole the entire lining membrane of the uterus, and of setting up peripheric changes by derivation. The faradic current excites the nervous and muscular systems after the manner of a mechanical force, by interruptions and shocks. The galvanic current, however, is a physical and chemical force, at once caloric and trophic, and brings each of its factors into action separately or together as desired. All binary compounds and those of greater complication will tend to decomposition, and this decomposition, called electrolysis, will be in proportion to the electric energy given out, and to the length of time of the application. This interstitial breaking up of the elements, which will be preceded by a different orientation in the polarization of the organic molecules, tends, on the one hand, to bring around the positive pole the acids and oxygen, while the bases and hydrogen go to the negative pole. This serious molecular action ought to be sufficient for an intelligent theory of the effects of the galvanic current, but recent experiments which we have made place these facts upon an indisputable basis. My friend Laguerrière and myself have found that the galvanic current sent through culture media of pathogenic microbes is *germicidal*, thus confirming what I said long ago, that this current was *antiseptic*, and would *attenuate* or *sterilize* certain conditions of germ change. Applied in a given region the galvanic current acts locally and generally; each

pole has its undivided caustic action—the one acid, the other basic. The current is felt in the interpolar zone, engendering trophic changes, and tending to the resolution of certain pathological conditions.

The doctor of to-day who has not kept apace with the advance of gynecological science, lauds to his utmost the curette, which first saw the light in France, but has long since fallen into desuetude in the land that originated it. Without wishing to discredit a surgical procedure of value in certain conditions, the superior advantages of the intra-uterine galvanic current are beyond dispute.

(a.) It is simple and easy of application, requiring no assistant, and may be used by any one, no matter how little experience he has in gynecology.

(b.) Being but slightly painful, chloroform is not needed, this being only demanded in certain cases of puncture.

(c.) It is valuable among working women, as a short period of repose alone is necessary after the application, instead of hours and perhaps days in bed.

(d.) It can be gradually and gently applied by progressively increasing the strength, and is less brutal than the curette.

(e.) It is not contraindicated in any acute case of inflammation—the sole caution being to use extra care, and to increase the strength only as the patient is able to bear it.

(f.) It is an agent which, instead of being blind, obeys in a precise and mathematical manner the hand applying it; that is to say, one can measure and administer it and at the same time have an exact record of the amount of cauterization produced, to which three things conduce: the general intensity made use of, the density of the active electrode, and the duration of the application.

(g.) It is an active force, which will produce an active result localizable at will, and which may be concentrated upon any part of the uterine lining membrane desired.

(h.) It is absolutely harmless if proper antiseptic or aseptic precautions are made use of.

(i.) According to the intensity and duration its action can be varied, and also according to the active pole made use of; it may be made acid by using the positive pole, and basic by using the negative pole.

(j.) Apart from the curetting action of the chemical galvanism, which one can easily see, there is a more profound action trophic and vital, and which is propagated along the whole organic circuit between the two poles. Thanks to this last consideration, above all in the treatment of salpingo-ovaritis, this chemical galvanism has a power far above surgical curetting, chiefly in reaching the uterine parenchyma and adnexa.

(k.) If surgical *râclage* often results in frequent

returns of the disease, causing anatomical and functional troubles which it hoped to combat, I can affirm that these results are much less frequent by the electrolytic treatment, which may require several sances to produce a lasting effect, but which good results, as I have had reason to observe in my clinic, last for many years after the cessation of all treatment.

The operative technique is already sufficiently well explained in my various brochures upon the electric treatment of fibroma and endometritis. I shall content myself with giving you merely the salient features of the treatment of ovaro-salpingitis. The positive pole always causes less congestion than the negative, but the latter is more valuable to promote resolution. The positive pole should be used generally in the commencement, and once having passed the first stage of toleration, the negative pole should be substituted. The dominant preoccupation which should make us cautious in treating salpingo-ovaritis, and which is sometimes difficult of recognition, is the fear of finding ourselves in the presence of a pyosalpinx, which a large dose of galvanism would aggravate; so, when in doubt, begin very gently with a mild current to test the susceptibility of the uterus and peri-uterine tissues, then increase with the patient's tolerance and according to clinical indications. One may begin with 20 to 40 milliamperes. If the intolerance is great, respect it and do not increase; if well tolerated increase to 100–150 milliamperes. Here clinical diagnosis must be called in to differentiate between hysterical intolerance, that need not be heeded, and an inflammatory intolerance which must be respected. The sittings should not be too frequent. In the initial treatments they are frequently followed with a reaction more or less intense, which may last several days; generally we should wait until calm is reestablished. Sometimes the sances may be given once or twice a week, sometimes only every fifteen days. The same reasons must guide the doctor as to the length of a sance; sometimes they should last three minutes and sometimes five to eight minutes.

3. I now come to the third division, the most efficacious of all, the penetration with the galvanic current of one of the vaginal cul-de-sacs at the nearest point of the inflamed region. I mean *vaginal galvano-puncture*. There are two clinical indications, the one of *choice*, the other of *necessity*. The indication of choice presents itself when one finds himself in presence of a salpingo-ovaritis which has not been sufficiently ameliorated by the intra-uterine galvanism. It is necessary then to penetrate the mass in the point the nearest possible to the diseased spot, in order to lose nothing of electric force, which now should seriously concern itself with the suffering point. Theoretically the application, well made, should be most efficacious, and no doubt rests in my mind that such is

the case, for the reply of all the patients who have submitted to this plan is that the punctures were much more painful but much more efficacious, because often one puncture gives more relief than many simple intra-uterine applications. The indication of *necessity* for galvano-puncture is when a fluctuating tumor impinges upon the vagina, and which should be drained antiseptically through the vagina.

Already many years ago I gave the rules for the essentials of galvano-puncture. I will only now cite the chief points:

(a.) Here, as in all electrical treatment, be it faradic or galvanic, one should precede everything with thorough antiseptics, preceding and following every operation with an antiseptic vaginal irrigation, either of sublimate, carbolic acid, creoline or naphthol. Between the séances we will do well to close the vaginal cavity with iodoform gauze (or sublimate or salol gauze), to insure perfect asepsis, as well as to prevent sexual congress, which should be suspended.

(b.) With the preceding electrical treatment it is not necessary to remain in bed. I exact from my patients only one or two hours of repose after galvano-caustique, without denying, however, that a longer period might be beneficial. Galvano-puncture, however, requires at least two or three days of rest in bed after each puncture.

(c.) The trocar carrying the current should be the smallest possible, but of sufficient resistance not to be easily broken. Steel is the best, because it penetrates easily.

(d.) The chief point is the depth of the puncture. A slight puncture of a *half centimetre*, as an average, suffices to make a door of entrance for the current in the region which it is to traverse. Deeper punctures do not suffice any better to attain such an end; on the contrary, as I have seen, they may be dangerous. I proscribe all punctures over 1 centimetre.

(e.) Where make the puncture? Questions of choice and necessity here come up. The choice is to puncture as near as possible the diseased portion, but necessity forces us to avoid at all cost the anterior cul-de-sac on account of the bladder. The lateral, and above all the posterior regions are the most favorable for the puncture. I make them oftenest in the posterior cul-de-sac, in the middle of the pouch of Douglas, directing the axis of the instrument toward the uterus in order to avoid the rectum.

(f.) This operation, much more painful than galvano-caustique, is often tolerated by certain women, but in others chloroform will be required.

(g.) I *never use a speculum* in this operation, which can only be well and delicately carried out as follows: One fixes at first the exact length of the puncture, by turning the screw and advancing the steel point to the required length beyond the celluloid, then, having fixed with the index finger

the exact point to be punctured, and having made sure that there is no arterial pulsation, one slides the celluloid up to the point, which serves as the conductor for the trocar, which is then plunged in.

(h.) The number of punctures demanded is variable. Some cases of hydro- and catarrhal salpingitis yield to one puncture, some require three or four, and tubercular tubes even more.

Generally these cases require much longer periods of intermediate repose than cases of galvano-caustique, because at their commencement they are often followed by a severe reaction, which may last many days. The application should not be renewed until all of the symptoms have disappeared.

(i.) As to intensity and choice of poles I repeat what I said just now when speaking of intra-uterine galvanization. The intensity will vary from 20 to 50 milliamperes. To go beyond this is to go beyond the point of tolerance, and chloroform should be used. To create a temporary vaginal fistula 100 to 250 milliamperes will be required.

(j.) The puncture should generally be positive at first, because it is more tolerable and less exciting than the negative. This latter is employed when a more powerful action is demanded. Especially in presence of a fluctuating tumor pointing into the vagina, in which a fistulous tract is to be made and vaginal drainage established, is the negative pole demanded.

(k.) Should febrile excitement arise, all treatment is to be suspended. One may think himself in the presence of a pyosalpinx, if it points into the vagina, and a puncture is not contraindicated; but if it is high up, not accessible, and far from the vaginal cul-de-sac, a deep puncture, which might cause an evacuation into the cavity of the peritoneum of the sac, is to be avoided. It is here that surgery must step in to carry out its legitimate functions.

My clinical experience, which is now seven years old, has given me many cases of salpingo-ovaritis, which I hope later on to tabulate. I shall content myself now with some results of my treatment. Every salpingo-ovaritis will generally be suitable for appropriate electrical treatment, and this should be the conservative method of choice; it is sovereign in catarrhal salpingitis, only calmative in tubercular salpingo-ovaritis, and in certain pus tubes may be of great service. Whatever electric treatment is made use of, it should be continued until the patient pronounces herself cured of her symptoms, and until an examination has satisfied us that the anatomical change is considerable. Surgical interference should never be resorted to until after all electrical resources have been exhausted. Castration, which morally and physically mutilates a woman after an incurable fashion, and only cures radically in a fourth

or fifth part of the cases, should be only an operation of necessity, never of choice, and should be regarded as a last resort. Electrical conservative therapeutics, harmless, easily applied by any one, and which does not pretend to cure every case of salpingo-ovaritis, finds its greatest triumph in rendering a *subsequent conception* possible, as I have seen in several of my patients. I will not harass you with the details of all of the cases that have been to me for treatment, but will content myself with giving you full details of two typical cases, in one of which there were two subsequent conceptions, the other remarkable clinically, and though long it is full of interest, demonstrating that electricity, persisted in and rightly used, may be of the greatest value in the different troubles that may beset the same patient.

COMPLETE HISTORY.

Madame Sophie Edinger, æt. 34 years, living at 5 Rue de l'aqueduc, Paris, presented herself at the clinic of Dr. Apostoli, August 17, 1886.

Precious History.—Nullipara, neither pregnancy nor miscarriage. Born in Lorraine. Has lived at Paris for seventeen and a half years. Mother died at the age of 48 in consequence of a profuse uterine hæmorrhage, the cause of which was unknown. Menstruation easily established at the age of 11. Since its appearance it has been of the following regular type: Occurring at fixed intervals, the flow has lasted on an average six days, and has been *painless*; it has always been *very* abundant, and often accompanied by the expulsion of clots. At 13 and at 17 years of age, without an appreciable cause, the periods were suppressed for about two or three months, without other morbid phenomena. Slight, intermittent leucorrhœa.

Of a rather delicate and lymphatic temperament, the patient had several of the diseases of childhood, eczema of the head, and frequent attacks of gastritis which often caused vomiting of the food. At 28, a light attack of rheumatism, localized in the two arms, which lasted one week.

Married at 29 years of age. From the beginning of her marriage her health has been disordered. The most striking phenomena from the first were the menstrual troubles characterized by an increase in the quantity of the flow, by its more frequent occurrence, and by pain preceding the flow for one or two days and disappearing as soon as it was established. Her married life, then, was marked for five years by the appearance of a *true dysmenorrhœa*, very intense, which has persisted until to-day, and which often obliged her to go to bed. Usually the pain disappeared suddenly on the appearance of the flow.

Since her marriage her general health has also been disordered; she began to grow thin, and her appetite became capricious. This condition persisted for three years, during which time she

worked, though with difficulty. For two years past (1884–1886) her condition has become progressively much worse. The pain, formerly intermittent and premenstrual, has become almost constant, interfering with the walk, making standing impossible, and localizing itself as a continuous dragging or tension in the right iliac region, radiating posteriorly to the lumbar region, and anteriorly to the right groin, involving further the entire corresponding thigh as far as the knee. This pain has increased greatly, without changing the condition topographically, at the time of the periods most of all, obliging the patient to take a forced rest.

For some months after the marriage the sexual relations were very painful. Then the pain disappeared, to reappear again two years ago with much greater intensity, finally making all sexual relations impossible. Intercourse also provoked and increased the pain in the right iliac region. The patient has never, up to this time (1886), had any pain in the *left* iliac region. *For eight months the patient scarcely left her bed*, attacked by pain so intense as to cause her to cry out involuntarily; this was accompanied by almost daily vomiting of sometimes alimentary, sometimes bilious matter. She grew thin more rapidly and her appetite became more and more perverted, while the digestion became more painful. The abdomen was extremely sensitive, and the pain was always localized on the right.

She was also decidedly constipated. The menstruation was at times transformed into a veritable metrorrhagia, an almost constant flow with an interval of only one week between the periods.

The patient was treated regularly by Dr. Mandet, who applied the usual classic treatment of emollients, milk *régime*, opiates, revulsives upon the abdomen, etc. It was at the instance of her physician that she came to consult us, on account of the total lack of success of the most varied and assiduous treatment that had been instituted.

Actual Condition August 17, 1886.—The patient is humble, impressionable, nervous, but not hysterical, so feeble, and suffering to such a degree, that she had to be brought to the clinic in a carriage and assisted upstairs. She is emaciated, without color, and exhibits a state of considerable suffering. On palpation the abdomen is painful, and sensitive in the two iliac fossæ, especially in the right. For a year it has been impossible for her to remain erect without an abdominal support.

The internal examination is difficult on account of an excessive sensibility of the uterus, and especially of the cul-de-sac. An inflammatory exudate entirely surrounding the uterus constitutes a single mass, adherent to the sacrum, to each side of the pelvis, and enclosing the uterus.

An examination shows at times in the middle of this total cellulitis, which envelops the uterus, a plane, subadjacent, more resistant and fibrous,

which indicates the presence of an interstitial uterine fibroid, localized especially at the right and anteriorly.

Diagnosis.—Peri-uterine and subacute inflammation with interstitial, subadjacent fibroid, and ovarian salpingitis. Pronounced retroversion. Sound measures 7 centimetres.

Treatment.—August 21, 1886. *First, intra-uterine negative galvano-caustic, 100 milliampères, for five minutes.* Two hours after the treatment the patient returned home.

September 9, 1886.—Patient reports that she has had a flow lasting twelve days, which began the day after the first treatment, and which has greatly fatigued her. This flow is probably due to the first operation (treatment), which was wrong. This was *negative* and ought to have been *positive*. This flow was accompanied by an increase in the vomiting already existing. In order to calm the patient, she was given an *intra-uterine, bi-polar faradization of tension, with the fine wire, for five minutes*, and starting with to-day, in order, hereafter, to carry on this treatment simultaneously with the treatment of the uterus, *the bi-polar galvanization of the pneumo-gastrics was begun*, to alleviate the gastric phenomena, the most serious of which is the vomiting.

This galvanization is given at a dose of 5 to 12 milliampères, for five to fifteen minutes each time.

September 21.—*First positive, intra-uterine galvano-caustic* (made with the object of arresting the hæmorrhage), 175 milliampères, five minutes.

Sept. 30.—*Second positive galvano-caustic.*

Sept. 30.—*Third positive galvano-caustic—idem—150°, five minutes.*

The last period occurred Sept. 22, and lasted six days. The vomiting of food, which was incessant, and almost daily before the beginning of the treatment, has been overcome at the onset by the galvanization of the pneumo-gastrics, which has not only put her in a condition to tolerate the milk which she had been ordered to take, at the clinic, but also has again given her an appetite, almost unknown before.

October 7.—*Re-commencement of the negative galvano-caustic in order to accelerate the absorption of the exudate. Second negative galvano-caustic, 80°, five minutes.*

October 12.—*Third negative galvano-caustic, 30°, three minutes.*

It was necessary to discontinue the treatment after a sitting of three minutes, on account of the *mal au cœur* of which the patient complained. Strength is restored, the stomach performs its functions much better. Since the beginning of the treatment she has never vomited on the days of treatment, and in the intervals has vomited but rarely. For fourteen days there has been entire absence of vomiting. She begins to walk more easily, and with less pain, but still suffers when sitting. The constipation persists. She has con-

stant numbness in the right leg. She is still obliged to keep her bed almost all the time, and only leaves it to come to the clinic.

October 14.—*Fourth negative galvano-caustic, 100°, five minutes.*

October 19.—*Fifth negative galvano-caustic, 100°, five minutes.*

Has had her menstrual period since this morning, but with much less pain. The complexion is clearer and the expression better.

October 21.—Menstruation continues; flow abundant, but there is no menorrhagia.

October 26.—Vomiting again on the 23d and 24th. *Fifth negative galvano-caustic, 100°, five minutes.*

November 4.—*Sixth negative galvano-caustic, 150°, five minutes, badly borne.*

November 6.—*Seventh negative-galvano caustic, 60°, five minutes.*

November 9.—*Eighth negative-galvano caustic, 60°, five minutes.*

The vomiting has quite ceased; only a slight nausea remains. The appetite and digestion are always better on the days of treatment; the day following she is sometimes not quite as well. There is an equal improvement on the part of the abdomen; it is less sensitive on pressure, and swells only when she is tired from walking. For fifteen days she has been able to sit up part of the day.

November 11.—Patient is menstruating and (a fact most characteristic in favor of her improvement) she has suffered much less than usual, and has not had to go to bed. She has been able to walk alone without support, a thing which formerly was impossible in this condition. She declares herself completely transformed.

November 11. *Eighth galvano-negative, 90°, five minutes.* An internal examination shows an appreciable change. The half of the exudate has disappeared, and on the right it has left bare the sub-adjacent fibroid, the diagnosis of which is emphasized to-day. The uterus begins to be movable, and can be slightly displaced.

November 20.—*Ninth galvano-negative, 100°, five minutes.*

November 27.—*Tenth galvano-negative, 80°, five minutes.* Since the beginning, each treatment is followed by an antiseptic vaginal injection, after the method of Van Swieten, and a tampon of iodoform gauze is left in the vagina.

November 30.—Patient has just had a return of her former painful symptoms, without an appreciable cause. This lasted eight days, and was marked by a reappearance of the old vomiting. Galvanization of the pneumo-gastrics, which produced immediate relief. The weight is increasing; without the clothing it is 118 pounds.

December 2.—Amelioration of the abdominal pain. No vomiting since November 30. *Eleventh galvano-negative, 80°, five minutes.*

December 4.—Twelfth galvano-negative, 60°, five minutes. The patient is becoming more intolerant of the action of the galvano-caustics, but each time she feels greatly relieved by it, and sleeps better the night following.

December 23.—Thirteenth galvano-negative, 80°, five minutes. Patient feels well. The gastric troubles have disappeared; she walks better, but is still unable to do her housework.

December 28.—On account of the intolerance which begins to be manifested for the galvano-caustic which, at the beginning, was well borne at 100°, and now is somewhat painful at 60° or 80°, and in order to hasten the cure—which may be considered as still in the rough—both anatomically and symptomatically, the galvano-punctures are begun.

First vaginal negative galvano-puncture at a depth of one centimetre in the right-lateral cul-de-sac, with a filiform trocar of steel, at 200° milliampères, five minutes. Patient under the influence of chloroform. Vaginal injection of sublimate solution 1-1200 before and after the séance, vaginal tampon of iodoform gauze. Patient remained at the clinic for six days without leaving her bed. Vomiting appeared the evening of the day she was treated and the following day, and was relieved by the galvanization of the pneumo-gastrics.

Menstruation occurred December 31, ten or twelve days in advance, of average quantity, though rather less than formerly. For the first time since her marriage the menses appeared *without pain* and without the formation of clots. A complete calm has followed the appearance of the menses. The patient has eaten with a good appetite and has recovered her power to sleep, which she had lost for a long time. In a word, she feels as if she were transformed, and she seems to have derived more benefit from this first puncture than from all the preceding galvano-caustics.

January 4, 1887.—The patient left the clinic to return home. Since then her health has constantly improved. The following is a statement of the typical modifications which have been progressively determined from the 4th to the 22d of January, 1887:

1. Walking has become much easier. The patient is able to come to the clinic without the companion hitherto necessary. She is much less fatigued than formerly by the jolting of the carriage.

2. She is able now, for the first time, to do her housework, discontinued eighteen months ago.

3. Digestive functions good. She has more appetite, while the nausea and vomiting have ceased.

4. Parallel transformation, anatomically speaking. On examination the peri-uterine sensibility is less acute. The retrogression of the exudate makes rapid progress.

5. Restoration of all the functions, and notably considerable diminution of the abdominal pain.

Every two days she has had an antiseptic vaginal injection, and the tampon of iodoform gauze has been changed.

January 22.—Second negative, vaginal galvano-puncture, to the right, at a depth of 1½ centimetres; made this time without chloroform. The pain limits the intensity to 50 milliampères, eight minutes. The patient did not remain at the clinic but returned home the same evening. Slept well and did not suffer. The menses appeared the next day, five days in advance, and for the second time without pain and less profuse.

January 25.—Antiseptic vaginal injection.

January 29.—Walking is still easier, patient finds herself "very light."

February 10.—The orifice made by the last puncture is closed. Third negative, vaginal galvano-puncture, at a depth of one centimetre, 60°, five minutes, without chloroform. Antiseptic injection, and vaginal tampon of iodoform gauze.

February 12.—Patient suffered for some hours after the last puncture, although she was able to go home that evening. She was rather more tired than after the previous punctures, and attributed this to the fact that the operation was done without chloroform.

February 15.—For the first time in eighteen months the patient has had sexual intercourse, which was effected without too much pain.

March 5.—Galvano-puncture without chloroform was attempted. Patient was unable to tolerate it, and after some seconds the application was discontinued. Nausea and efforts to vomit rendered the continuation impossible and unbearable.

March 8.—The evening following this aborted puncture there was a recurrence of the abdominal pain. The next day, March 6, menstruation began, for the first time in her life eight days late. Unlike the three last periods, the flow has been more abundant, painful, and accompanied by the expulsion of clots. The question arises, in view of the recent sexual relation and of the delay in the menstrual function, so abnormal, if this, as seems probable, was not a miscarriage? There was also a renewal of the digestive disturbance, but without vomiting.

March 19.—Fourth negative galvano-puncture, in the posterior cul-de-sac, under chloroform, 150°, five minutes.

March 22.—Patient remained in bed at the clinic 24 hours. She suffered a little after this puncture, but found herself again very much improved. From this date the patient, who has had three times a week antiseptic vaginal injections, and tampons of iodoform gauze, finds herself again progressively improved. One month after, the orifice made by the puncture had not closed. The uterus begins to be easily movable.

April 20.—For the first time in years the pain seated in the plane of the right iliac bone, and radiating posteriorly and anteriorly, has disappeared. Continued anatomical improvement.

May 3.—On examination the fibroid appears to-day very clearly marked, and the inflammatory exudate can only be perceived on deep pressure. The mobility of the uterus increases. Fifth galvano-puncture (negative) in the right lateral cul-de-sac, at a depth of one centimetre, 150°, five minutes, under chloroform.

May 5.—Patient vomited the evening of the treatment and the day following, due probably to the great amount of chloroform absorbed. She remained 24 hours at the clinic. Since the puncture the amelioration has been on the increase. Patient has continued to come to the clinic three times a week for the galvanization of the pneumo-gastrics, and to have the iodoform tampons changed.

June 4.—The following is a statement of the actual condition:

1. Patient has just taken a long walk without fatigue.

2. All spontaneous pain in the right groin has disappeared.

3. Menstruation in April and in May occurred, after a delay of two to four days, *without pain, and less profuse*, lasting five to six days. Slight *malaise* at the end of the periods.

4. The complexion is better, she has more color, and has lost the former deathly hue.

5. She feels transformed, strength recovered, and says she is able to work.

6. The constipation has disappeared. Patient has a daily movement of the bowels.

7. The patient, comparing the benefit from the galvano-caustics with that from the punctures, affirms that the benefit from the latter is very much greater, especially from the punctures made under chloroform, at a higher dose, which proves that the effect increases with the intensity, other things being equal.

8. Patient has never been as well as at present since her marriage.

9. The sexual relation is not very painful.

10. From an anatomical point of view the exudate has been reduced three-fifths. The patient remains under observation, and it is probable that no new interference will be necessary, since she believes herself nearly well from every point of view, and capable of leading the active life of a tradeswoman.

June 7.—Patient weighs 119 pounds. (In December she weighed 118 pounds.) Dr. Apostoli made a futile attempt to pass the sound. This was painful and could not be completed. In the evening the patient had a bloody discharge, which was certainly provoked by the attempt to pass the sound. This discharge continued almost without interruption from the 8th to the 16th of

June; it was neither accompanied nor preceded by abdominal pain.

June 18.—The discharge has been arrested since the 16th, since which time there has been an offensive return of the pain in the right iliac fossa.

June 21.—The old gastric disturbance reappeared the day before yesterday; the patient vomited, and was obliged to come to the clinic for the galvanization of the pneumo-gastrics. Walking is again difficult, and the countenance is once more depressed in consequence of the relapse, which can only be attributed to the sound. With the single object of calming the patient, a first vaginal faradization was immediately given, using the large bi-polar vaginal sound, the extremity of which was applied against the right lateral cul-de-sac, the most painful part. Application of *a current of tension, with the fine wire, with slight intensity, for fifteen minutes.*

The acute pain disappeared immediately after the treatment, the expression became better, and walking easier. Patient continued to be relieved during the evening and somewhat the next day: on the third day there was an offensive return of the old symptoms.

June 23.—Third vaginal faradization, identical with the first, lasting ten minutes, with the same amount of relief.

June 24.—Third faradization, ten minutes.

June 25.—Fourth faradization, ten minutes. Since the 22d the amelioration of the pain has been progressive, and parallel with this the gastric trouble, which always occurs with the pain, has been relieved. The patient has not vomited, indeed, since the 22d; the digestive functions are re-established, walking is easy, and sleep good.

June 30.—In order to bring about the complete resolution of the remainder of the old exudate, a sixth negative, vaginal galvano-puncture was made to-day, *to the right posteriorly*, in the most prominent portion of the fibroid, 180°, five minutes. Depth of puncture, one centimetre. Patient chloroformed. Remained at the clinic 24 hours without any incident worthy of note, and returned to her home the next day.

July 2.—No loss of blood. Patient suffered very little after the puncture. She had a little nausea, but did not vomit. Antiseptic vaginal injections, and tampons continued.

July 12. Menstruation continued from the 4th to the 7th, moderate in quantity, without clots, and without pain either before or during the flow. Since the cessation of the menses the patient has suffered for three days, and has had a return of the gastric trouble. The abdominal pain is better to-day. *Intra-uterine faradization*, with the fine wire, for *five minutes*, badly borne. Galvanization of the pneumo-gastrics continued.

From July 19 to August 20 the patient continued her visits to the clinic regularly three times

a week. *Bi-polar vaginal faradizations with the fine wire* have sufficed for treatment. Thus she has had *seven successive sittings of five to eight minutes each*, the result of all of which has been to increase progressively her *bien-être*, and to relieve all abdominal pain. One month after the last puncture the orifice made by it had not closed, but the patient was able to continue her occupation, in spite of the presence of a temporary vaginal fistula, thanks to the antiseptic precautions which have been carefully observed. Conjointly with the vaginal treatment the galvanization of the pneumo-gastrics has been carried on, according to the indications and, as usual, each séance has been followed by an immediate alleviation of all the gastric disturbances.

October 16, 1887.—Patient has been so well that she suspended her visits to the clinic after the 28th of August. She walks easily, does not suffer, and has no pain during sexual intercourse. Her sleep is good, she eats well, and digests easily. The abdomen is no longer painful, even when she is tired. She is scarcely sensible of a slight dragging the first day of her menstrual periods. Total absence of leucorrhœa.

January 12, 1888.—Excellent health since the last visit. Patient has worked constantly and been able to do really hark work since October, and this without interruption during her periods, which last on an average six days. On palpation, one finds absolute insensibility of the abdomen. On internal examination, the uterus is found to be movable, the peri-uterine exudate is almost entirely absorbed, and there is marked diminution of all sensibility, even with deep pressure.

January 26, 1888.—Same good condition. The journeys which she is constantly obliged to take, even during menstruation, do not fatigue her.

April 16, 1889.—Of her own accord the patient has discontinued all visits to the clinic since January, 1888. She comes to-day by special request. Her health has remained perfect in every particular, and she believes herself radically cured, because all the functions are normal. She has not been indisposed for a single day, and has continued her fatiguing work without interruption.

Actual Condition, April 16, 1889.—Complexion fresh and of good color, giving every evidence of health. Walking very easy. Erect position not at all painful. Menstruation is always regular. It occurs on a fixed day, without delay. The quantity diminishes progressively. Formerly the flow continued six days, at present it lasts but three or four days. There are no clots. *There is complete absence of pre-menstrual dysmenorrhœa.* She feels only a little tired, and slight abdominal pain before the appearance of the flow. She is always able, even during her menstruation, to work easily and without fatigue. Vesical functions normal; no constipation; complete absence

of leucorrhœa; sexual relations are rather painful. *Palpation*: the two iliac fossæ are not at all painful.

Internal Examination.—Neck in normal position. Uterus movable, without appreciable sensibility. Absence of pain on touching the cul-de-sac, but a deep exploration causes rather acute pain in Douglas' pouch, very little laterally. The uterus is easily displaced laterally, but on raising it it is found to be slightly adherent to the sacrum.

With a deep touch the right ovary can be felt, also the right Fallopian tube, which no longer seems to be inflamed. The rectal examination confirms what has been determined by vaginal examination. All efforts to pass the sound—even a very small sound—are futile. The sound is arrested by an almost complete atresia of the external orifice.

Nota Bene.—This absence of dysmenorrhœa, which is coincident with a considerable degree of uterine atresia, is a new fact, which, with the addition of those which I already possess (in all a very large number) stands in favor of the thesis which I have sustained for a long time, the frequent independence of dysmenorrhœa, and uterine atresia, and confirms this proposition: *Dysmenorrhœa is almost always of ovarian origin, very rarely of uterine origin.* The patient affirms again to-day that, judging without appeal, the respective results of the different treatments that she has undergone, she has derived the greatest benefit from the galvano-punctures, although more painful and often scarcely to be endured without chloroform.

In order to get all possible information on the origin of the disease, I saw the husband to-day (April 23, 1889), for the first time, who stated that he had, in 1878, while in the army, a manifest gonorrhœa, characterized by pain on urination, and a discharge *sui generis*. He claimed to have been rapidly cured of this disease by the usual treatment. Five years after this he married, and it is possible that in spite of his statement he had still, at this date, an unknown gonorrhœa, which must have been the point of departure, as is usual, of the peri-uterine accidents of his wife.

SECOND OBSERVATION; SUMMARY.

Madame Marie Elien, domestic, aged 22 years, presents herself at the clinic of Dr. Apostoli June 9, 1885; unipara.

Antecedents.—No hereditary antecedents, habitual good health, no diseases of infancy, menstruated at 17 years of age, scantily during two days on an average, and without pain. Married at 21 years, pregnant immediately after, prematurely confined in seven months, after a fall on March 13, 1885. Immediate consequences apparently good, and probable commencement of the

present malady six weeks later at the time of the menstrual return. Profuse metrorrhagia, which has existed a month, and acute pains in left side of abdomen, work impossible, sexual relations very painful. Has kept the bed for a month with fever. Gastric troubles.

Diagnosis.—Endometritis. Double prolapsus of the uterine annexes, and left ovaro-salpingitis. Uterus bound down.

Treatment.—First galvano-cauterization, intra-uterine, negative, 100 milliampères, five minutes.

June 13.—Improvement as to the pain. Metrorrhagia continues.

June 16.—First galvano-puncture, vaginal, negative, made in the posterior cul-de-sac, with a fine steel trocar, to the depth of one centimetre, without anaesthesia, 80 milliampères, five minutes. Rather lively reaction the same evening of the operation, which became calmed in the night, and after which she was better. Continuation of the metrorrhagia.

June 18.—Disappearance of the pains—has not kept the bed since the beginning of the treatment.

June 23.—Expulsion of a slough last evening and considerable diminution of the retro-uterine exudate, as well as of the vaginal sensibility.

June 30.—The same good condition.

July 4.—Marked improvement.

July 9.—All flow has ceased.

July 11.—Second galvano-puncture, vaginal, negative, in the posterior cul-de-sac, to the depth of one centimetre, 100 milliampères, five minutes, without anaesthesia, and without a sojourn at the clinic—only rested two hours, the same as at the first time.

August 4.—No inflammatory reaction as a result of her last puncture. She has been able to endure easily a journey into the country, from which she has just returned after an absence of three weeks.

August 8.—Same good condition. Third galvano-puncture, vaginal; negative, 50 milliampères, five minutes.

Sept. 12.—Improvement persists. Walking is more easy.

Sept. 17.—Fourth galvano-puncture, vaginal, negative, 50 milliampères, five minutes.

Sept. 22.—Fifth galvano-puncture, vaginal, negative, 50°, five minutes.

Sept. 29.—Offensive return of the pains under the influence of a great fatigue and the renewal of the sexual relations in spite of our injunctions to the contrary. Fresh metrorrhagia.

Oct. 6.—All is quieted, the flow is arrested, and she does not suffer.

Oct. 13.—The improvement continues, the posterior puffiness has almost disappeared, and she can be considered as cured.

Oct. 22.—Another galvano-puncture made

solely for the purpose of perfecting the cure. Sixth and last galvano-puncture, vaginal, negative, made as the preceding ones, to a depth of one centimetre, without anaesthesia, and with the aid of a small steel trocar, after having taken all the precautions possible for vaginal antisepsis before and after each treatment. No sojourn at the clinic, repose only for two hours. All of these galvano-punctures, although painful, were in general well tolerated, and were not followed by any inflammatory reaction.

Oct. 30.—She is very well, she is cured symptomatically and anatomically, all the exudate has disappeared; but the uterine annexes remain prolapsed, a deep and quite forcible vaginal pressure is necessary in order to provoke sensibility. She ceases all treatment spontaneously.

Jan., 1886.—Beginning of a *second pregnancy*, during which she can continue her work without interruption.

August 30.—Premature confinement at about seven months without appreciable cause, expulsion of a dead fœtus, immediate results good, almost immediate resumption of her work.

Oct. 6.—Same good condition as a year ago. The uterus can be displaced laterally, but preserves still some posterior adhesions. Defecation, previously painful, is easy and causes no longer sensitiveness. To resume, a year after cessation of treatment the patient remains cured. Symptomatically and anatomically she remains very much improved, her health is perfect in every direction and the sexual relations, impossible before the treatment, provoke no longer any sensitiveness.

January, 1887.—Commencement of a *third confinement*, which developed normally.

Oct. 21.—Normal confinement at term, and results of the lying-in good. Resumption of her domestic work almost at once. Nurses her child.

May 12, 1888.—She has not kept the bed a single day, and has not lost the benefit of her treatment, same anatomical condition, same prolapsus of the uterine annexes, especially the left, without any inflammation.

August.—Commencement of a *fourth normal confinement*, during which she worked constantly.

April 28, 1889.—Confinement at term. Sequelæ of the lying-in excellent, no pains in the abdomen, no leucorrhœa, was able to recommence her work on the tenth day.

June 8.—Is very well, all her functions are normal, she nurses her child.

Local Examination.—On pressure, a slight ovarian pain in the left iliac region is observed, the uterus is normal, very movable laterally, but cannot be lifted without a little difficulty, on account of the posterior adhesive bands, same prolapsus of the annexes, more pronounced on the left, with one tube in the recto-vaginal wall, no signs of salpingo-ovaritis.

To resume, the treatment, composed of *one galvano-cauterization and of six galvano-punctures*, had an immediately favorable result, symptomatically and anatomically, which survived four years after, and which permitted the evolution of *three consecutive confinements, of which two were at term*.

OBSERVATIONS ON OVARIAN SALPINGITIS;
SUMMARY.

Woman, aged 34, multipara, scrofulous. Until the age of 29 menstruation regular, abundant, and without dysmenorrhœa. Married at 29. Sudden appearance immediately after of an intense, premenstrual dysmenorrhœa. Sanguinous flow and frequency of periods increased. Same unfortunate condition for three years, making work often difficult. For two years progressive aggravation of the local condition: continual abdominal pain, walking almost impossible, daily vomiting, suspension of sexual relations because so painful, beginning of an almost continuous metrorrhagia, unsuccess of all classic treatment. After remaining in bed for eight consecutive months almost all the time, the patient presented herself at clinic August 17, 1886.

Complete peri-uterine inflammatory exudate, with subadjacent fibroids, and right ovarian salpingitis.

From August 21 to November 23, 1886, thirteen negative, chemical, intra-uterine galvano-caustics of 60 to 150 milliampères, five minutes each, with two galvano-positives at the beginning, to arrest the existing metrorrhagia, and, in addition, bi-polar galvanization of the pneumogastriacs three times a week.

Marked anatomical retrogression and considerable symptomatic amelioration. In order to perfect the cure, from December 28, 1886, to June 30, 1887, six negative, vaginal galvano-punctures at a depth of one centimetre, posterior and to the right; two, without chloroform, at an average of 60 milliampères, five minutes each, and four, with anæsthesia, of 150 to 200 milliampères of five minutes each. Amelioration more marked and rapid under the influence of the galvano-punctures. Some vaginal and intra-uterine faradization of *tension*, with the fine wire, were practiced to alleviate the pain, and, simultaneously, galvanization of the pneumogastriacs, which were always victorious over the gastric troubles.

Suspension of all treatment in August, 1887. At this date the patient declared herself symptomatically cured. Walking easy, riding well borne, difficult work tolerated even during the periods, entire disappearance of all spontaneous pain, increase in strength, better health than for several years, menstruation regular, disappearance of all dysmenorrhœa. Anatomically the retro-uterine inflammatory exudate has almost disappeared.

From August, 1887, to March, 1889, all the functions have been normal and the cure has remained well defined.

THE ETIOLOGY OF LEPROSY.—A CRITICISM OF SOME CURRENT VIEWS.

Read in the Section on Dermatology and Syphilography at the Fortieth Annual Meeting of the American Medical Association held at Newport, R. I., June, 1889.

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Putting to one side, for the present, the bacillus, which all pathologists agree is to be found in every leprous neoplasm, the supposed etiological factors of leprosy which have been most considered of late years, are three, viz., (1.) Heredity. (2.) A diet of fish. (3.) Contagion.

The theory of heredity has had immense support, both lay and professional, and it is curious to observe how loth some medical authors are to set themselves free from its trammels, or to question its influence in propagating the disease, even though many of the facts which they themselves adduce seem obviously to lead to quite another conclusion. As Mr. Jonathan Hutchinson points out,¹ the fact of leprosy occasionally appearing in healthy immigrants, and just as severely as if such persons belonged to leper families, is enough to prove that hereditariness goes for little or nothing in its causation. It is indeed idle to deny the liability of leprosy to attack individuals who have not the slightest hereditary taint.

In a recent paper,² my friend, Dr. Blanc, who has in late years seen probably more cases of leprosy in the United States than any one observer, shows that in forty-two cases treated by him, twelve were natives of foreign countries (seven German, one Austrian, one English, one Irish, one French, one Italian), and of the remainder, eighteen were the children of foreign born parents (chiefly German and Irish), "from which we conclude," he says, "that if the disease is hereditary, it must be derived from a variety of foreign sources; and if acquired then it seems to attack the children of immigrants as often as those of the older native families." What evidence can be stronger against heredity?

An important paper on the Heredity of Leprosy has lately been published by Dr. G. A. Hansen,³ who made a journey to North America last year to see what had become of the Norwegians who had gone there as lepers or had de-

¹Clinical Lecture on "Leprosy, its Cause," etc.—Med. Press and Circular, Nov. 4, 1885.

²"Leprosy in New Orleans." N. O. Med. and Surg. Journal, 1888.

³Virchow's Archiv., Vol. CXIV. 1888.

veloped leprosy after their arrival in the new world, and to study this question of heredity in particular. With the help of Dr. Hogh, of Minneapolis, and Dr. Grunwald, of Minnesota, he was able to find out that about 160 Norwegian lepers had been established in the states of Wisconsin, Minnesota, and Dakota. Many of them are married, and several have left a good many descendants. There are, in addition, many other Norwegian immigrants who are either descended from lepers, or have leprosy relations in Norway. There is, therefore, in those districts, considerable material for the inheritance of leprosy. Of the 160 leper immigrants only thirteen are left, which he himself saw, and besides these there are perhaps three or four others. All the rest are dead. Of all their descendants whom he has seen as far as the great grandchildren, not one has become a leper. This is, in short, the result of his investigations; and he says there can be only one explanation, viz., that leprosy is not inherited.

The Fish Theory.—In reference to this old theory, Mr. Hillis wrote in 1881 that it "may now be laid aside as obsolete;" and it is, I believe, almost universally discredited by the medical men in Norway, as well as in every other part of the world where leprosy is rife. Nevertheless, one who is justly regarded as one of our highest British authorities is still, it seems, an ardent believer in the view that the disease is contracted by the eating of fish, more especially fish which has been somewhat decomposed, or has been salted.⁴

Those who oppose this theory may well point out that while numbers of people in Scandinavia, in Africa, and in other countries, habitually regale themselves with imperfectly cooked or decomposed fish, and do *not* get leprosy, numbers of those who *do* acquire the disease are not aware of ever having eaten anything of the kind. (This negative argument is apparently at least as good as that largely relied on by the anti-contagionists, who infer that because many persons who come in contact, or even live with lepers, do not become lepers, therefore the disease cannot be contagious under any circumstances.)

If, indeed, it must be through *one* particular article of diet, in all parts of the world, that the germ of leprosy is introduced into the system, why may we not select something which everyone must swallow at some time or other, such as, for instance, bad water? Filters and other precautionary measures are, at any rate, not particularly fashionable in leper countries.

We really have no direct arguments against a possible dietetic origin for leprosy, *i. e.*, at least by means of contaminated food; and the view of Dr. Living promulgated in his Gullstonian Lectures so long ago as 1873,⁵ viz., that the disease may

be "propagated by the inhibition of the excretions of those affected, much in the same way as typhoid fever or cholera," may yet come to the front and secure further support.

The Contagion Theory.—Although clear and distinct instances of the direct communicability of leprosy from person to person are few and far between, and, from the nature of the disease, its latency and uncertain prodromata—difficult to prove, it appears to me that we cannot now deny its "contagiousness" in the sense that untainted individuals may occasionally become affected with the disease after being in close relation with lepers. As far as I can see there is no getting over Dr. Hawtrey Benson's case,⁶ and as that careful physician remarks, "to ignore the evidence of contagion in this case, where the circumstances are so simple and so well authenticated, is indeed to strain scientific caution to its utmost limit, if not beyond it. . . . The proof of contagion afforded by this case possesses a force little short of that of a mathematical demonstration." I agree with him that "one such fragment of positive evidence carries more weight than a vast accumulation of negative evidence." In 1885, in his lecture on leprosy, Mr. Jonathan Hutchinson is reported to have said, "of course, if you are prejudiced in favor of its contagiousness, you can produce instances apparently in favor of it, especially if you reject a thousand negative facts in favor of one fact which seems to support it. I submit that no one who will read a record of the facts can ever believe that contagion can take place." There are other authorities, too, who, having made up their minds on the subject many years ago, are "of the same opinion still;" several, however, have seen reason to modify their views. Until a few years ago most of the Norwegian physicians disbelieved in the contagion of leprosy. Dr. Hansen, however, the discoverer of the bacillus, boldly asserted its infective character; and I found last year that Dr. Sand, of Trondhjem, and Dr. Kaurin, of Molde, have both come round to his way of thinking. The veteran Dr. Danielson, however, is still of the old opinion—for, as he told me, "in all his long experience with the disease he had never met with one single instance of contagion." Dr. Nickoll also has no belief in the contagion of leprosy, nor indeed in its heredity. Dr. Kaurin now considers that leprosy is not transmitted by heredity, although like Virchow and many others, he admits that there may be hereditary predisposition to contract the disease. He informed me that he had seen several cases, besides the one he has published, which point to direct contagion. Dr. Sand is of a similar opinion; and I learnt from him that he has known of two cases of servants—one at the Molde asylum, and one

⁴ Mr. Jonathan Hutchinson, l. c., p. 417.

⁵ "Elephantiasis Groccorum, or the True Leprosy," 1873, p. 93.

⁶ Dublin Journal of Medical Science, 1877, p. 562, and letter in British Medical Journal, April 13, 1889.

at Bergen—having contracted the disease while in attendance on lepers. He knows, too, of many other instances which can be, at any rate, most satisfactorily explained by the theory of contagion.

Dr. Phillippo, of Jamaica, gave me, last year, his opinion as follows: "It is communicable by contagion. This has always been the opinion amongst most of the laity, and, with some reservation, amongst many of the medical profession. Of late years I have known some most undoubted cases of contagion, and yet there have been many instances of relatives who have for years lived in daily intercourse of the freest kind, as parents and brothers and sisters, who have not suffered, and a small number of those who undoubtedly have. . . . I know of cases where there was no hereditary disease in which one member of a family has taken it from another. In one case, the husband, a European, took it from the wife. In him it ran a rapid course, and he died before her, though she had it for years before him. I know of cases in which this disease has been taken from outsiders, and have heard of others in which it has been taken from the wet nurse."

It is interesting to observe that Dr. Phillippo is one of those authorities mentioned by Dr. Gavin Milroy⁷ as being opposed to the view that leprosy is contagious.

Dr. A. R. Saunders (M.D., Lond., F.R.C.S. Engl.), one of the leading practitioners (for 14 years) of Kingston, Jamaica, has recently informed me that he has no doubt whatever as to the contagiousness of leprosy, and that he has under his care at the present time in Jamaica several cases which can only be explained by the theory of contagion. He ridicules the idea of a fish diet having anything to do with the disease.

Dr. Blanc, of New Orleans, states in the paper quoted, his belief, after a study of these forty-two and other cases, "that leprosy may be communicated from a leprosy to a non-leprosy person by means of a specific virus, which acts like a specific poison of syphilis, depending upon thin or denuded surfaces for its absorption, and which remains potent, very probably, for an indefinite period of time."

The doctors in the Sandwich Islands are all (and have been, with one exception, Dr Fitch, report, Honolulu, 1886), believers in the contagion of leprosy; as are many of those at the Cape, in India, in the West Indies, and elsewhere. Dr. G. H. Fox, of New York,⁸ indeed says, "Now it is generally admitted by those who have most carefully studied the facts of the case that leprosy is a contagious disease." He further remarks that "granting leprosy is contagious, we are forced to admit that it is so only to

a very limited extent." Most people will concur in this.

Some of the ablest observers are still keeping their minds open on the question. Dr. Beaven Rake writes that he has met with no case of contagion in Trinidad, but that he can bring forward many negative instances. His inoculation experiments on animals, too, have been so far unsuccessful—as were those which were formerly practiced on the human subject in Norway, in Mytelene, by Bargilli, and more recently in Sicily by Profeta. Even Arning's experiment on the convict at Honolulu, is, in Dr. Rake's opinion, not conclusive. This man, Keann, was inoculated September 30, 1884, by Dr. Arning, "after having previously made a most searching inquiry as to any leprosy taint in his family, and a close examination of his own body," which examination, says Dr. Arning, "satisfied me that, as far as I am able to judge, no trace of the disease could be found on him at that time." Dr. Beaven Rake's valuable "Report on the Trinidad Leper Asylum for 1888," has just been kindly sent to me by the author. In it, in reference to this inoculation, he says, "When, however, we come to examine this question dispassionately, what do we find? A man living on an island infested with leprosy was inoculated three years' ago with the disease and has now developed it. But in that time he may have acquired leprosy in a dozen different ways, in air, food, water, etc., or it may have been in his family. True, the man was ascertained as far as possible to come of a clean family, and he has been isolated in goal since the inoculation. Still, anyone who has attempted to take the statement of lepers will appreciate the value of family history, and in a country where leprosy is rampant are we sure that it can be shut out by four walls? I repeat what I said in my last report, that an experiment of this, kind, to be scientifically perfect, must be performed in a country free from leprosy, and in an individual who has never left that country, and whose immediate ancestors have always stayed at home."

Mr. C. Macnamara, then of Calcutta, discussing in 1866 the Indian Reports on Leprosy in an able article in the *Indian Medical Gazette*, stated in addition to other arguments in favor of the view of its contagiousness: "(1. A large proportion of the civil surgeons in this presidency believe, from personal observation, that the disease is contagious. (2.) The instances quoted from this report can only be explained by supposing the disease to be contagious."

Any opinion, however, which was favorable to contagion prior to the year 1867 went for nothing, for in their celebrated and authoritative Report of that year, the Royal College of Physicians of London, made the sweeping statements, so often quoted, that: "The all but unanimous conviction

⁷ In his report on Leprosy in the West Indies, 1873, p. 30.

⁸ In his "Remarks on the Treatment of Leprosy," New York, 1885.

⁹ Appendix to Report on Leprosy, Honolulu, 1886, p. 43.

tion of the most experienced observers in different parts of the world is quite opposed to the belief that leprosy is contagious or communicable by proximity or contact with the diseased. The evidence derived from the experience of the attendants in leper asylums is especially conclusive on this point. The few instances that have been reported in a contrary sense either rest on imperfect observation, or they are recorded with so little attention to the necessary details as not to affect the above conclusion." More than 250 replies to the interrogatories of the College Committee had been received from medical men and others located in the various leper centers, and a large majority of these were undoubtedly in the negative with regard to the communicability of leprosy from person to person. Some 32 or so, on the other hand, gave a more or less affirmative answer in reference to the question; and several qualified men actually cited cases in support of their views; *e. g.*, amongst others. Drs. Aquart, of Grenada; Manget, of British Guiana; Regnaud, of Mauritius; Jackson, Harris, and Messrs. Macnamara, and Rose, of India. On looking over the report, it is difficult to see why the opinions of these gentlemen, many of whom had been for years in charge of lepers, should have been, apparently, considered so unreliable and worthless, in comparison with the others. The College, it seems, did not modify its views for years; but in 1887 we learn that "the committee are quite aware that there is much difference of opinion respecting the communicability of leprosy, and that many colonial practitioners and inhabitants do not concur in the views expressed by the College in their Report in 1867."¹⁰

There is indeed, as the Committee now admits (April 7, 1889), "increasing evidence respecting the communicability of leprosy;" and it seems to me that we cannot ignore the cases reported, and the opinions formed upon them, by such qualified observers as Vandyke Carter in India, Petersen and Münch in Russia, Besnier, Vidal, Leloir, and Cornet in France, and by many others of large experience and of high repute in all parts of the world.

In point of fact, however, any circumstances whatever—however strong they may be—which apparently lend support to the contagion theory, so long as they occur in a country in which leprosy is prevalent, are liable to be laid aside with some such "begging-the question" remark as, that "after all it only amounts to this, that a person has become a leper in a place where the disease is endemic!"

In conclusion, I venture to express the opinion—after a somewhat extended study of the subject—that, with the facts at present at our disposal, it appears to be a pure assumption, unsupported by valid evidence, to say that leprosy can *only*

gain a footing in the human body *per unam viam*.

Dr. Gavin Milroy, the secretary of the committee which scouted the idea of contagion, said, after his visit to the West Indies, that "leprosy appeared to him to be neither more nor less contagious than scrofula." We have no reason to assume that it may not be introducible in as many ways, although, perhaps, with much greater difficulty. The problem will, possibly, be fully solved when we know the whole life history of the microbe which is characteristic of the disease.

THE AMERICAN MEDICAL ASSOCIATION AND ITS RELATIONS TO PUBLIC HEALTH.

Read in the Section on State Medicine, at the Fortieth Annual Meeting of the American Medical Association, June 27, 1889.

BY N. S. DAVIS, M.D., L.L.D.,
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Although the primary and potent influence that prompted the movement that resulted in the assembling of the Convention of delegates in the city of New York, May, 1846, to effect a permanent National organization of the profession of the United States of America, was the desire to elevate the standard of professional education and thereby increase the usefulness and honor of the profession; yet even that preliminary Convention did not pass without initiating important measures having a direct bearing on the interests of public health.

On the second day of that Convention, May 6, 1846, Dr. John H. Griscom, of New York City, offered the two following resolutions, which were adopted without opposition:

"Resolved, That a Committee of five be appointed to consider the *expediency*, and if deemed expedient, the *mode* of recommending and urging upon the several State Governments the adoption of measures for a registration of the births, marriages and deaths of their several populations.

"Resolved, That Mr. Lemuel Shattuck, of Boston; Drs. Jarvis, Dorchester, Mass.; Emerson, of Philadelphia; T. R. Beck, of Albany, N. Y.; and C. A. Lee, of New York, be a Committee to prepare a nomenclature of diseases, adapted to the United States, having reference to a general registration of deaths, to report to a future Convention."

By vote, the mover of the resolution was added to the Committee, as Chairman.

To constitute the Committee under the first resolution, the President of the Convention appointed Drs. J. H. Griscom, Alonzo Clark, Charles A. Lee, and James Stewart, of New York; and G. Emerson, of Philadelphia.

At the adjourned Convention, assembled in Philadelphia, May 5, 1847, both these Committees made able reports, that received the cordial sanction of that body. The report by the Committee on Registration of Births, Marriages and Deaths, contained a brief and pointed appeal addressed

¹⁰ Vide "Leprosy Committee Report," R. C. P., July 15, 1887.

to the several State Governments, in favor of the enactment of such laws as would secure a general and uniform registration, and indicating the benefits to be derived therefrom. It also recommended the appointment of a Standing Committee to take general charge of the subject and annually report progress to the Association. It further recommended that the several State Medical Societies aid in urging the matter upon the Legislatures of their respective States. These recommendations were adopted, and after the Convention had resolved itself into the American Medical Association they were persistently prosecuted until there are but few States in the Union without laws of more or less efficiency on the important subject of vital statistics.

The important bearing of this movement made at the threshold of this National organization upon the interests of public health is more fully appreciated when we remember that it is only by a reliable registration of deaths and their causes in the population of any city or country that we are enabled to locate such deaths and compare their ratio to the population in one locality with another. This gained, the way is open for a careful comparison of the conditions of the soil, water, air, food, and personal habits, in the localities in which diseases and deaths prevail most, with those in which their ratio is lowest. And thus indication for the sanitary improvements come into the mind with all the clearness and force of well ascertained facts.

The Standing Committee to take general charge of the subject of registration, or vital statistics, as recommended in the report to which I have alluded, appointed by the Convention and approved by the Association after the completion of its organization, in May, 1847, consisted of the following members, viz.: Drs. J. H. Griscom, C. A. Lee, A. Clark, and John D. Russ, all of New York; and G. Emerson, of Penna.; R. D. Arnold, of Georgia; and Mr. Lemuel Shattuck, of Mass.

Probably the first attempt to make a general investigation concerning the hygienic and sanitary condition of the whole country was made by the Medical Department of the National Institute, at Washington, D. C., in 1845, when a Committee was appointed, consisting of Drs. James Wynne, Thomas Sewall, J. M. Thomas, Marcus Buck, and Dr. Baile, of the U. S. Navy. This Committee from time to time issued circulars addressed to members of the profession and others in different parts of the country soliciting information regarding the condition of the public health and the causes supposed to be capable of affecting it, in their respective localities.

At the second meeting of the American Medical Association, held in Baltimore, 1848, two members of the Committee, Dr. James Wynne, Chairman, and Dr. J. M. Thomas, attended as delegates from the Medical Department of the

National Institute, and presented a memorial, not only calling attention to the subject, but inviting the Association to appoint a committee to take charge of the further prosecution of the work. In their memorial it was stated that many replies to their circulars had been received and much information of more or less value obtained, but not sufficient to justify the publication of a formal report on so important a subject.

The memorial was received and referred to a Special Committee for consideration. At a subsequent stage of the meeting the Committee reported, recommending the appointment by the President of the Association of a "Committee on Hygiene," to consist of twelve members, and with power to fill vacancies in their own numbers. [See Transactions of the Association, 1848, pp. 38, 42, and 43.] The recommendation was adopted, and the President announced as members of the Committee on Hygiene, Dr. James Wynne, of Baltimore; Dr. Isaac Parrish, of Philadelphia; Dr. Charles P. Gage, of Concord, N. H.; Dr. Peter C. Gaillard, of Charleston, S. C.; Dr. John M. Thomas, of Washington, D. C.; L. P. Yandell, of Louisville, Ky.; Dr. John P. Harrison, of Cincinnati; Dr. Edward H. Barton, of New Orleans; Dr. Albert Smith, of Peterboro, N. H.; Dr. John H. Griscom, of New York; Dr. J. Curtis, of Lowell, Mass.; and Dr. Turner, of New Orleans.

Another subject of importance, and at least indirectly affecting the public health, received prompt attention at the same annual meeting, namely, the adulteration and deterioration of drugs. A long and very important paper on the subject was presented by Dr. T. O. Edwards, of Ohio, a member of the National House of Representatives,¹ which was responded to by a memorial to Congress urging the passage of proper laws for preventing the importation and sale of adulterated and worthless drugs.

It is thus seen that during the first year after the completion of its organization this Association had entered actively upon the work of promoting the public health in three directions, viz.: the securing of reliable registration of births, marriages and deaths; 2. the direct investigation of the causes of disease and the means for their removal; and 3. the securing of drugs of standard quality and purity. This third line of work was prosecuted so efficiently that Congress soon enacted the necessary laws for the proper inspection of all imported drugs, and they have continued in operation until the present time.

At the second annual meeting of the Association, which was held in Boston, May, 1849, the Committee on Hygiene, composed of twelve members, as already stated, made a brief general report on the subject of drainage, street cleaning, water supply, building and ventilation, nuisances,

¹ See Transactions 1848, pp 38 and 311.

and disinfectants, and special reports on the sanitary condition of the cities of Portland, Concord, Boston, Lowell, New York, Philadelphia, Baltimore, Charleston, New Orleans, and Louisville; on the use of disinfectants in the Navy, and on the influence upon health of the introduction of tea and coffee in large proportion into the dietary of children and the laboring classes, making in all 224 pages of the volume of Transactions for that year. These special reports and papers present a great variety of facts and observations of the highest importance, and to students of sanitary science they afford the best indication of the status of sanitary interests in this country half a century since that can be found on record. This is especially true regarding the special reports on Boston and Lowell, by Dr. Josiah Curtis; on Philadelphia, by Dr. Isaac Parrish; on Baltimore, by James Wynne; on Charleston, by Dr. P. C. Gaillard, and on New Orleans, by Edward H. Barton. The report of Dr. Curtis gives a very interesting history of the sanitary measures and public hygiene of Massachusetts from its early Colonial settlement to the time he wrote, 1848, including a valuable summary of its vital statistics.

In addition to the full reports from the Committee on Public Hygiene, the Standing Committees on Medical Sciences, and on Practical Medicine, in their reports at the same meeting of the Association, gave many facts of much interest relating to public health, particularly in connection with the appearance of Cholera in New York and in New Orleans in December, 1848, and other epidemic diseases in various parts of the country.

The next annual meeting of the Association was held in Cincinnati, May, 1850, when the Chairman of the Committee on Hygiene, the late Dr. Josiah M. Smith, of New York, presented one of the most interesting and valuable reports on the "Sources of Typhus Fever and the Means Suited to their Extermination," that I have ever read. Regarding human or animal excretions as the chief source of typhus and typhoid fevers, he gives a very complete exposition of the composition and quantity of the excretions from the human body, including the exhalations from the skin and the lungs, and of the extent to which the walls, furniture and air of rooms, as well as the soil and water, may become so contaminated as to develop and propagate the essential causes of continued fevers. Besides this report of the Chairman, two special reports were made by other members of the Committee. One was made by Dr. Edward Jarvis, of Dorchester, Mass., on the "Sanitary Condition of Massachusetts and New England," and is an excellent supplement to the special report of the previous year, by Dr. Josiah Curtis. The other was by Dr. J. C. Simonds, on the "Hygienic Characteristics of New Orleans," and is a fitting complement to

the report of Dr. Barton the previous year. At the same meeting of the Association in the report of the Standing Committee on Practical Medicine and Epidemics, made by Drs. J. K. Mitchell, R. LaRoche, and Francis West, we have a very able and detailed account of the great cholera epidemic of 1849, and embodying facts worthy of the careful study of investigators and practitioners of the present time.

The annual meeting of the Association for 1851 was held in Charleston, S. C., at which further reports were made by the Standing Committees on Public Hygiene, and on Practical Medicine and Epidemics. It was at that meeting that the Standing Committees were abolished and a large number of Committees appointed to report on special subjects. The several States of the Union were divided into eight groups, and a Committee of three was appointed for each group, to report on the prevalence of epidemics and their causes. In the reports of these Committees at the meeting of 1852, in Richmond, Va., may be found valuable information concerning not only the epidemics, but also of the topography and general sanitary condition of the districts where the epidemic diseases prevailed, in most of the Eastern, Middle and Southern States.

At this meeting, also, a vigorous movement was commenced for improving the sanitary condition of ships carrying emigrants across the seas, and for compelling them to have on board competent surgeons to render proper care of such passengers as need their services. An able committee was appointed and instructed to memorialize Congress on the subject, and to enlist the influence of the several State Medical Societies in the same direction.

At each subsequent annual meeting, until 1859, the Committees on the Topography, Epidemics, and Vital Statistics of the several States and large cities made reports of such extent and value that they occupy not less than one-third of the pages of the several volumes of Transactions for those years. Experience had been demonstrating from year to year the impossibility of hearing in detail such an amount of material in the General Sessions of the four days allotted to each annual meeting, and hence the larger number of these reports, as well as those made regarding other departments of medicine, were read by title only and referred for publication.

To remedy this defect, the eminent sanitarian who is at present presiding over this Section of State Medicine, in the annual meeting of 1859, moved to so amend the By-laws that the General Sessions of the Association during the annual meeting should be limited to the morning of each day, and the afternoon should be devoted to meetings in a specified number of Sections. The plan was earnestly supported by the writer of this report and adopted by the Association.

It provided for five Sections, namely : 1. Anatomy and Physiology. 2. Chemistry and Materia Medica. 3. Practical Medicine and Obstetrics. 4. Surgery. 5. Meteorology, Medical Topography, Epidemic Diseases, Medical Jurisprudence and Hygiene.

These *Sections* were first organized and entered upon their practical work at the next annual meeting, which was held in New Haven in 1860. They have been rearranged and added to from time to time until their number has been doubled. But through all the changes they have invited, received and caused to be published valuable contributions relating to the public health every year. So true is this, that the annual volume of the Transactions of this Association from 1847 to 1882 contain the materials for a more complete history of the more important epidemic diseases that have prevailed in different parts of this country during the last half-century, with a synopsis of what had been put on record previously, than can be found elsewhere. Accompanying the numerous papers relating to epidemic disease is to be found a large amount of information concerning the topography, soil, water and meteorology of almost every State in the Union. The same series of volumes contain papers and reports from many of the most eminent members of the profession on almost every question relating to personal and public hygiene and vital statistics, whether in the city or in the country, on board of ships, or in camps, prisons, or asylums; not even omitting the consideration of foods and drinks. And through it all there is evidence of a constant and ever increasing demand upon the various legislative bodies, State and National, for the enactment of such laws and municipal regulations as would remove all those unsanitary and destructive influences resulting from density of population and neglect of cleanliness, ventilation, drainage and water-supply. All these efforts in the National body were reflected back through their delegates to the State and more important local societies. The effect upon the legislative bodies has been slow, but constantly cumulative. At the date of the organization of this Association, Massachusetts was the only State having a law for the registration of births, marriages and deaths, which had been enacted in 1842, and had been imperfectly executed. Until that period even the statistics of mortality were chiefly obtainable only from the records of the various cemeteries belonging to the larger towns and cities. Twenty-five years later Dr. Joseph M. Toner, in a statistical report on Boards of Health of the United States, records the existence and regular organization of Boards of Health in more than *one hundred* cities and towns, and State Boards in seven States, namely, Massachusetts, Rhode Island, Virginia, Louisiana, California, Michigan and Minnesota. (See Proceed-

ings of Am. Public Health Association, Vol 1, p. 499, 1873.) Laws for the registration of vital statistics had been enacted in a larger number of States, and much influence had been gained both in the profession and outside of it, in favor of the establishment of a National Health Bureau. Indeed it was this rapidly increasing number of health boards and sanitary measures under the diverse legislation of many States that led directly to conferences among the Health Officers engaged in practical work, for the purpose of securing greater harmony of action. These, commenced in 1872, led in the following year, 1873, to the permanent organization of the American Public Health Association, and its subsequent career of usefulness. Later in the same year the severe epidemic of cholera prevailed throughout the Southwestern States, followed by an equally destructive epidemic of yellow fever in 1878-79, both of which served to greatly increase the action of legislative bodies, whether National, State or municipal, on sanitary measures. A National Board of Health was organized under a law of Congress, and although it proved of temporary duration it was followed by such an enlargement of the powers and duties of the U. S. Marine-Hospital Service as makes it, in some degree at least, a National health department, without the name. And State and local Boards of Health have become organized in nearly all the States and commercial cities of the country, and are annually increasing in their efficiency and harmony of action. In the accomplishment of these results, this Association with its constituent organizations, the State and local Medical Societies, has been not only the primary and chief force in moving legislative bodies to action on measures for protecting and improving the public health; but it has been steadily accomplishing an equally important work in educating the profession itself to a better appreciation of the nature and importance of preventive medicine, or sanitary science. And so far from having completed its work in either of these directions, it has only made a fair beginning, and improved its methods and implements for more efficient progress.

A knowledge of the causes of disease, their modes of development, the conditions under which they are capable of maintaining an active existence, and their *modus operandi* in the human system, must constitute the basis of preventive medicine and the only reliable guide to the adoption of such sanitary measures as will practically limit the prevalence of diseases and permanently lower the ratio of mortality wherever they may be instituted. That knowledge, which consists in the simple discovery or identification of the specific cause of a disease and its assignment to its proper scientific position among the myriads of organic germs, or in the long list of chemical products, is not sufficient for the successful prose-

cution of measures for the protection of the public health. Such identification is but a single item, though a very important one, in the series of facts needed for a successful warfare against the enemies of human health and life. Every living pathogenic germ must have its own pabulum or food and certain physical conditions of temperature, moisture, etc., for its development and propagation; and experience has shown that in a majority of instances measures for the removal of the pabulum, or for controlling some of the essential conditions, are more efficient in preventing its development than any measures for the direct destruction of either the living germ or the chemical ptomaine.

Therefore it becomes as necessary for the sanitarian to identify the materials in the soil, the water, the air, and in the living body, capable of feeding pathogenic germs or entering into the formation of ptomaines, as to discover the specific disease-producing agent itself. To cover the whole field of investigation successfully it is necessary to have the coöperation of all classes of workers in the profession. The carefully recorded observations of the general practitioner and of the specialist in their direct dealings with diseases and injuries, fixing the dates of their occurrence, progress and results, are as necessary to the proper understanding of the causes of disease and the conditions under which they are developed as is the most skillful work in the laboratories of the microscopist and the chemist.

It is only by the coöperation of observers occupying different standpoints of observation that the investigation of etiological subjects can be made complete. Consequently there is no medical organization in our country better adapted for the prosecution of such work than this Association, with its Sections covering all departments of medical science, and its JOURNAL through which the work of each becomes quickly distributed to the whole.

I trust, therefore, that this Section will not only continue a vigorous prosecution of investigations pertaining to the public health and preventive medicine, but will also so systematize the work as to render it more reliable and complete.

MEDICAL PROGRESS.

PHLEGMONOUS AND GANGRENOUS PROCESSES IN DIABETES.—Although the occurrence of purulent and gangrenous processes as the result of diabetes has been known for a long time, yet but little is known regarding the etiology, diagnosis and treatment of these processes. Formerly their etiology was sought in a specific action of sugar upon the tissues. Since König it is universally

believed that especially diabetic phlegmon is the result of an infection the same as other phlegmons. As regards diabetic gangrene, Schüller is of the opinion that it is caused by acute arteriosclerosis and previous inflammations induced by pus-cocci. For the diagnosis of diabetic phlegmon the following points seem to be of importance: Development from an insignificant injury, its combination with gangrenous processes, and its obstinacy.

Regarding the diagnosis of diabetic gangrene, its occurrence in still robust, relatively not old people, consequent upon some slight injury or inflammation, and its painfulness, are significant.

Concerning the treatment of phlegmonous and gangrenous processes, MAX SCHÜLLER (*Berlin Klin. Wochenschrift*, Nos. 47, 48, 49, 1888), advises an early surgical intervention, and warns against delay for the purpose of a previous general diabetic treatment; he considers local, surgical, especially antiseptic treatment at the beginning as more important than the former. The greatest stress must be laid upon the treatment of the phlegmon itself, and its rapid and easy spreading must be fought against energetically with extensive incisions, draining and rinsing, and baths with antiseptic fluids, even more energetically than in common phlegmons in patients not affected with diabetes. In diabetic gangrene the conditions are more unfavorable. Local treatment must likewise be strictly antiseptic. If the physician succeeds in this way in obtaining a line of demarkation or in confining the gangrene, the part affected must be removed from the healthy portion with strictest antisepsis; if the gangrene can not be checked, at least the patient's life may be saved, as König has shown, by antiseptic amputation.

From a prophylactic standpoint the author advises the strictest attention to even the slightest injuries, in view of the great vulnerability of diabetic patients and their tendency to phlegmonous and gangrenous processes.—*Wiener Medicinische Wochenschrift*, No. 17, 1889.

REGARDING GLANDULAR NERVES.—In examining the tongue of a rabbit after injection with methyl-blue, RETZIUS (Verh. d. Biolog. Vereins, of Stockholm, I, No. 1) found in the vicinity of the papilla foliata the little glands in that region overspun with nerve fibres colored a beautiful blue. Alongside the glands he saw little nerve-trunks whose axis-cylinders were blue, and from these single fibres branched off that ran toward the alveoli of the gland to divide again into branches there. These nerve fibres were varicose and so thin that they had to be regarded mostly as end fibrilli. They surrounded the alveoli of the gland in all directions like nooses, lay evidently close upon the membrana propria, and formed a rich network closely surrounding the alveoli. In

some alveoli it seemed to Retzius that these fibres ended in cells, but he could not discover them entering these cells.

Through this observation we have progressed a step in the important question of the glandular nerves, inasmuch as we have here the last branches of the glandular nerves on the alveoli of the glandular cells, and these nerve-fibres proved very abundant and fine.—*Centralblatt für Physiologie*, No. 2, 1889.

ON THE INDICATIONS AND PROGNOSIS OF THE OPERATIVE TREATMENT OF ABDOMINAL TUMORS.—In a paper published in *Orvosi Hetilap*, No. 48, 1888, W. TAUFFER, of Budapest, says: "Every movable ovarian tumor, of at least the size of a fist, if diagnosed with certainty, should be removed, and the sooner the better. Ovarian tumors located between the ligaments, deep in the pelvis, are so dangerous to approach (because of their close proximity to large vessels, the urethra, etc.) that their removal should be postponed until, rising from the pelvis, they begin to distend the abdominal walls and have thus become more accessible. Neither youthful or advanced age, nor malignant character of the tumor, kidney or heart affections, tuberculosis, extensive adhesions, acute peritonitis or a purulent character of the swelling should be considered an obstacle to the operation if the life of the patient appears to be endangered, and an improvement by the operation seems possible."

Despite these comprehensive views on the indications for operation, Tauffer lost of 172 ovariectomies (in ten of which supra-vaginal amputation of the uterus was necessary because of complicated conditions) only eighteen, *i. e.*, ten (4 per cent.), seven of these (4 per cent.) from sepsis.

The indication for ovariectomy Tauffer puts as follows: 1. Pathological changes in the position of the ovaries if causing acute symptoms and not curable otherwise. 2. Complete absence on deficient development of the uterus with normal ovaries, if ovulation causes intense pain. 3. Such diseases of the uterus as influenced by ovulation, heal after cessation of the latter (like intra-mural and some subserous myoma, fungus growths of the endometrium constantly returning, membranous dysmenorrhœa, many retroflexions not to be cured in any other way, etc.). 4. Chronic inflammation of the ovaries and their surroundings in cases where the entrance of blood accompanying evolution keeps up and constantly renews the inflammation. 5. Such acute diseases of the nerves as seem to be connected with ovulation and menstruation.

The thirty ovariectomies and salpingotomies made by Tauffer passed off without a fatality.

The radical treatment of tumors of the uterus he considers indicated: 1. In dangerous hæmorrhages which cannot be cured in any other way.

2. In symptoms of pressure which endanger the life of the patient, for instance, considerable pushing upward of the diaphragm, horizontal position of the heart, pressure on the large vessels, danger of incarceration, unbearable pains, etc. 3. If the tumor is growing rapidly. 4. If any complication dangerous in itself exists, or the vitality of the patient is sinking. Each of these conditions indicates the advisability of an early operation. In fifty-one cases of hysterotomy Tauffer had twelve with fatal results, *i. e.*, a mortality of 22.2 per cent. Regarding the treatment of the pedicle, Tauffer is a partisan of the extra-peritoneal method. In thirty-five other cases, only explorative incisions were made, or after opening the abdomen such adhesions of malignant tumors to the peritoneum or the intestinal walls were found as to make extirpation impossible; of these thirty-five cases, twenty-one terminated fatally sooner or later, whilst fourteen were cured by the operation.

Finally Tauffer mentions seven laparotomies with the following indications: Ancient irremediable inversion of the uterus; ileus caused by carcinoma of the intestines; twice extra-uterine pregnancy at the end of the pregnancy; twice hydronephrosis, and once loosening of adhesions which held the uterus in a retroflected position.—*Centralblatt für Gynäkologie*, No. 20, 1889.

A CASE OF HEMISYSTOLY.—DR. DEHIO demonstrated before the Medical Faculty of Dorpat sphygmographic courses taken from the radial artery and the neck veins of a patient with heart disease, in whose case there had been diagnosed an insufficiency of the mitral with grave compensatory disturbance and secondary relative insufficiency of the tricuspid valve in consequence of the dilatation of the right ventricle. Patient suffered from grave engorgements in the course of the great circulation, general dropsy, ascites, hydrothorax, orthopnoea, and during the last week of his life the well-defined symptoms of hemisystole of the heart, 80-76 contractions of the heart per minute could be distinctly counted by the aid of the stethoscope, but on the radial artery, as also on the carotid, just half as many pulsations (40-38) could be felt, so that there were two systolic and two diastolic tones for each perceptible arterial pulsation. Besides the systolic tones systolic murmurs could be plainly heard at the apex and at the lower end of the sternum. Simultaneously pulsation was plainly noticeable at the veins of the neck. Pulsation in the liver could not be established because of the ascites. The tracing upon the radial artery shows conclusively that this was a case of alternating pulse, a low pulse-wave between two high ones being distinctly visible in the descending portion of the curve; to be sure, this spot had become so small that the palpating finger could no longer feel it.

The tracing from the neck veins, on the other hand, show plainly two positive pulse-waves following each other rapidly, and separated by a longer pause from the next pair (pulsus bigeminus). The first wave of each pair corresponds with the perceptible radial pulse, the second is also in the neck veins, clearly shorter and almost always lower than its predecessor; only during expiration, when the obstruction in the neck veins became especially severe, the second wave was for a few days just as high as the first of the twin waves, or even a little higher.

This observation confirms the view advanced by Fränzel that the so-called hemisystole of the heart must be regarded as the highest stage of the pulsus bigeminus, during which the second wave of the twin becomes so small that it is no longer perceptible in the arteries of the great circulation. That the right ventricle produces alternately a strong and a weak pulse-wave the same as the left ventricle and isochromally with the latter, is demonstrated by the curves exhibited. A hemisystole as understood by Leyden, where the two ventricles act independently from each other, so that the right one within a given time contracts twice as often as the left, certainly did not exist in this case.—*St. Petersburger Medicinische Wochenschrift*, No. 18, 1889.

A CASE OF HEART THROMBOSIS IN MYOCARDITIS FIBROSA AFTER SCARLET FEVER, AND IMBEDDING OF A PORTION OF THE LEFT VAGUS IN CALLUS CONNECTIVE TISSUE.—SOMMER reports in the *Charité Annalen*, 1888, the case of a boy 10 years old who, nine weeks after recovery from scarlet fever, was taken with symptoms which led the author to suppose a hæmorrhagic nephritis with disease of the heart muscle. Later on symptoms of consolidation above the left lung, œdema of the legs and constantly diminishing diuresis occurred, and the heart symptoms became prominent. The examination of the heart when the boy was first received showed an extending of dullness toward the right, extending 2 cm. beyond the sternal line. The apex beat lies in the sixth intercostal space. In the course of the disease the pulse became alternating, greatly accelerated, 136–144–150, easily suppressible. Death ensued with symptoms of heart failure. At the post-mortem the heart was found to be greatly enlarged, both ventricles being much dilated with numerous parietal thrombi. The myocardium was largely replaced by dense connective tissue. Embolic infarcts in lungs, spleen and kidneys. No nephritis. The left vagus is surrounded by coarse fibrous tissue which originates from caseous and calcareous lymphatic glands. The microscope showed numerous granular cells, indicating degeneration in the compressed portion of the vagus. Supported by the investigations of Wasilief regarding the trophic relation of the vagus to the

heart muscle, Sommer supposes the changes in the heart to have been caused by the scarlatina and the partial degeneration of the left vagus.—*Centralblatt für Klinische Medizin*, No. 20, 1889.

FORMATION OF PTOMAINES AND TOXINES BY PATHOGENIC BACTERIA.—In a report to the Royal Academy of Sciences in Berlin, L. BRIEGER calls attention to the interest which attaches to the alkaloids produced by pathogenic bacteria, and makes public the results which he obtained by examination of the cultures of typhus bacteria on freshly peptonized blood albumen. He found in it neuridin ($C_8H_{11}N_2$), which is isomeric with cadaverin; furthermore, mydin ($C_8H_{11}NO$), which he had found so far only once in preparing human bodies. This ptomaine forms a picrate (melting-point 195°) crystallizing in broad prisms, a chlorhydrate crystallizing in colorless little plates, an easily soluble chloro-platinat; it reduces a gold solution immediately, as also a mixture of chloride of iron and cyanide of calcium and iron. The free base has a strong alkaline reaction, and the smell of ammonia. Besides these two ptomaines the author obtained several times an extremely poisonous toxine which causes severe purging, sometimes also bloody urine, but has not been examined yet accurately. The author calls attention to the surprising circumstance that no ptomaine causing inflammation or necrosis could be separated from the typhus cultures. Finally he mentions that milzbrand bacilli have an oxidizing effect and produce some methylguanidin from creatin; but this occurs only when these bacilli are cultivated in bouillon containing peptonized blood albumen; in pure bouillon cultures another ptomaine originates which is not well known yet.—*Centralblatt für Physiologie*, No. 3, 1889.

THROMBOSIS OF THE CAVERNOUS SINUS.—PROF. NOTHNAGEL recently related a case of which the diagnosis was thrombosis of the cavernous sinus. (*Rev. Gén. de Clin. et de Therap.*, No. 26). The patient, aged 70, three years ago suffered from severe pain on the right side of the head, resembling neuralgia of the fifth nerve. Later there occurred diplopia and strabismus, which afterwards was succeeded by immobility of the eyeball. There is now closure of the right eye, œdema of the upper eyelid and right cheek, increase of temperature of that side of the face, and attacks of tic douloureux; anæsthesia involving the same region and also the tongue, conjunctiva, and cornea; vascular injection of the conjunctiva; intense keratitis and iritis. These symptoms referable to involvement of the fifth nerve and all the ocular nerves suggested a localized lesion at the base of the brain and were most likely due to cavernous thrombosis, caused probably by localized chronic meningitis rather than a tumor.—*The Lancet*, July 6, 1889.

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SATURDAY, JULY 27, 1889.

THOMAS KEITH ON FIBROIDS OF THE
UTERUS.

In the present number of THE JOURNAL will be found a very comprehensive article by Dr. Apostoli, of Paris, on "The Treatment of Salpingo-ovaritis by Galvanism." In this connection it is very interesting to notice the high estimate in which Apostoli's treatment of fibroids of the uterus is held by so eminent an abdominal surgeon as Mr. Thomas Keith, as advanced by him in an article in the *British Medical Journal*, of June 8, 1889.

Dr. Keith, in the beginning of this article, deals with the assertion advanced by many of the opponents of electricity, to the effect that Apostoli's method is nothing but the revival of an old process, by giving the information that he was an assistant of Sir James Simpson at the time the latter was experimenting with the "so-called 'discussion' of uterine and ovarian tumors," and that now he "doubts if any electricity got into the body at all by the old methods, and, if this did so happen no good could have come of it for the interrupted current was always used."

Since those days he has carefully watched the many attempts to introduce electricity for the treatment of uterine tumors, but there was nothing to encourage him to try any of them. Drs. Kimball and Cutter certainly cured some, he thought, but he has too lively an impression of the risk of inserting large needles through the abdominal wall into the tumor to think of adopting that method. Dr. Keith's watching brought its reward, however, for he says:

"The only treatment not surgical worth speaking about that I have seen do any good, and which at the same time, is one free from danger to life if the treatment be undertaken by one who has respect for a strong electrical current, is that brought before us by Dr. Apostoli. If any one should have held on firmly to hysterectomy it is myself, for my results after it are better than any other. I have, however, thrown over all surgical operations for this new treatment, and the longer I follow it the more am I satisfied. . . .

"To the surgeon, no doubt, hysterectomy is the good and simple plan. He may have his bad quarter of an hour at the operation, but then he has practically done with the case, and he gets his result quickly, sometimes more quickly than he cares for. If the patient recover there is pleasure all around; if things go badly and the patient die, he bewails his bad luck, as it is called, . . . waits a little, and then, though rather unwillingly, does another. He resents any other treatment than that by the knife. He especially resents Apostoli's treatment of fibroids by electricity, for the result is long in coming; it is a slow treatment, requiring great patience, great tenderness of manipulation and much thinking. . . . But with patience the result is certain. . . . There is no mutilation, a thing abhorrent to most women. . . . It puts a woman with a fibrous tumor, who suffers much, into the position of a woman with a fibrous tumor who does not suffer or may be even unaware of its presence. It does not bring about the disappearance of the tumor, or it does so very rarely, but the size is lessened more or less—one-half, one-third, two-thirds. . . . Tension is taken off everywhere, all around, and bladder irritability from pressure, a common cause of distress, is relieved. In a word, the woman is made well, her whole life is changed. All this can be done without danger to life, and if there be pain during the time the current passes the fault is in the operator. What more does a reasonable woman who has suffered much desire or need?

"What have those to offer in place of all this who have so bitterly opposed this treatment, who with unlimited material stand aside and will not take the trouble to investigate the matter for themselves, but wait till someone else does it for them, who make only an outcry if by chance they hear of any accident during the progress of the treatment of any case, and who go frantic over the rumor of a death, or worse still, who proclaim they know of deaths that never happen? These men have absolutely nothing whatever to offer in the bad cases, and only hysterectomy in such tumors that will come out more or less easily, so as to be treated by the extra-peritoneal method of operating. I have seen not a few cases of had bleeding fibroids since I came to London, almost everyone had consulted one or other surgical authority on the subject of operation. These were invariably told that nothing would do them any good but the removal of the tumor; but in their special case the local difficulties were too great, or they had let their strength go down too far for such an operation. The very feeble and bad cases, with masses of tumor blocking the pelvis, with absence of cervix, and opened-out broad ligaments, would seem to be

let alone. Hysterectomy then, at best, would appear to be a most doubtful remedy for a certain number of cases, and these not of the worst sort. On the other hand, the worse the case, the more feeble the patient, the greater the loss of blood, the more marked is the result of electrical treatment. Given a woman with a large bleeding fibroid, blanched almost to death from years of hæmorrhage, and see her some months after this treatment is completed, you would scarcely recognize her, the improvement is so great."

In an experience with his method in the treatment of a large number of cases, Dr. Keith has to mourn the loss of but one life, and of this he says:

"I do not say that the treatment was of itself the cause of death, which, I am satisfied, need not have happened; and in this I am borne out by the opinion of the patient's brother, a medical man. . . .

"The old spirit that at one time would have no abdominal surgery still unfortunately lingers amongst us. Electricity in any form, when applied to the cure of disease, is set down as pure quackery by many medical men, simply because they know nothing about it, and won't take the trouble to learn for themselves what to many is rather a hard study. . . .

"What I now plead for is that, for a time, all bloody operations for the treatment of uterine fibroids should cease, and that Dr. Apostoli's treatment, as practiced by him, should have a fair trial. Those who have hitherto most resisted the introduction of electricity are the surgeons who are the best competent to carry it out. They are accustomed to manipulate in the pelvis, and they will not make mistakes in the diagnosis, or make them as seldom as it is possible to do. Hysterectomy, remember, which is performed every day for a complaint that rarely of itself shortens life, kills every fourth or fifth woman who is subjected to it. This mortality must cease; it is not a question of surgery, it is a question of humanity. Every time that any disease can be cured without resorting to a bloody operation such as hysterectomy, progress is made in our art, and there is a gain to humanity, while surgery is the better for being purged of a deadly operation. It may seem strange to some that after the results I got in hysterectomy—results that almost made it justifiable—I should now begin to throw stones at the operation instead of trying still further to improve upon it; and but for Dr. Apostoli, I would now be doing so. I would give something to have back again those sixty-four women that I did hysterectomy for, that I might have a trial of Dr. Apostoli's treatment upon them; and I would give something never to have had the wear and tear of flesh and spirit that these operations cost me, for in scarcely one of them was the operation simple.

"I have said my say, and it must not be forgotten that the opinion here expressed as to the value of Dr. Apostoli's treatment is not that of an unsuccessful surgeon, but is the deliberate opinion of one who was the first to lower to a minimum the mortality that so long followed abdominal surgery, and who, by the best results in hysterectomy—results that Dr. Playfair is pleased to call almost phenomenal—still retains the position."

INSANE ASYLUM INVESTIGATIONS.

Recent events, too familiar to our readers to call for special mention, have set in motion one of those periodical waves of popular distrust in regard to the treatment of the insane in public institutions, which from time to time sweep over our country, leaving behind them some wrecked reputations, but too often, accomplishing little but destruction. While the excitement lasts the innocent are apt to suffer with the guilty; when it subsides things settle back into very much their former condition. We do not propose, at present, to discuss particular cases, but to suggest some general considerations which it seems to us well to bear in mind when such charges are made.

In the first place, there is no class of cases in which the maxim that a man is to be held innocent till he is proved guilty, is more applicable than this. The Superintendents of asylums for the insane, as a class, are by no means inferior to the average of our profession, either in attainments, character or disposition. Their position exposes them to constant assaults upon their reputation. No degree of humanity or tact will protect them from charges founded in the delusions or malice of their patients, and those who are most faithful and vigilant in guarding against abuses and enforcing discipline are most certain to incur the ill-will of lawless and vicious subordinates. Accusations coming from such sources may demand investigation, but they should be looked upon with suspicion, and if they are eagerly caught up and assumed to be true by the public, men who value their reputation will be likely to seek some other employment. Even the much-abused attendants are entitled to the same charity. In all well-regulated institutions they are selected with great care among numerous applicants; they are carefully instructed in their duties, and whatever may be the shortcomings of some of them, it is safe to say, that as a class, they are caring for the unfortunates under their charge with more skill and patience than most of their critics would exercise in their place.

In the second place, when abuses are discovered, the responsibility should be placed where it belongs. If an institution of this kind is made a part of the spoils of partisan politics, if its funds are used to enrich mercenary politicians, and its offices to reward their heelers, the community

which allows such a state of things has no occasion to be surprised or shocked if its insane are crowded into insufficient and unsafe quarters, if they are hungry and naked, if they are neglected and abused by incompetent and vicious attendants. The guilt is not confined to those personally concerned in such abuses, it is shared by those who, actively or passively, have abetted the system which gave them their opportunities for mischief. To rest content with their punishment while the system remains unchanged would be merely setting another set of wolves to watch the sheep. It may be said in general that attempts to combine a poor-house and an asylum for the insane under the same management, have not usually had very satisfactory results, at least, so far as the latter is concerned. The standard is apt to be set by the accommodations and treatment allotted to paupers, and whether sufficient for them or not, it is not suited to the needs of the insane.

Finally, it is, in our opinion, questionable whether, in some instances, the well-meant efforts of friends of the insane to improve their condition have not had results which were not foreseen nor desired. The abolition of mechanical restraint, for instance, has been advocated in some quarters with an enthusiasm which seemed to make it an end to be obtained at any cost, rather than a means of securing the comfort and improvement of the patients. It might be imagined, from some of the accounts which have been published, that interference with the personal liberty of the insane was the cause of all their misconduct, and that an asylum for their care and treatment would run itself, to the satisfaction of all concerned, if the patients were only allowed to do as they pleased, without interference, except by way of friendly suggestion from physicians and attendants. Now the fact is, that some of the *insane* are no more amenable to reason than the *sane*. Tact, patience and kindness will work wonders in many cases, but there are those who can only be restrained from mischief by physical force in one form or another, and others with whom the only alternative is fear. Attendants are expected to control their patients. Their reputation, and the comfort and safety of their inoffensive patients, as well as their own, depend upon their keeping the disorderly and violent in subjection. To struggle, for hours at a time, day

after day, with a powerful man, or to be continually subjected to assaults from one who understands and presumes upon his impunity, is a pretty severe strain upon the mildest disposition, and, though unfortunate and wrong, it is not strange that human nature does not always endure the trial. We have reason to think that in some cases where the use of mechanical restraints has been forbidden in the quiet and order of the wards, so gratifying to officers and visitors, has been due in part, to the clandestine use, by attendants, of still more objectionable means.

The proper care of the insane is a work of sufficient difficulty to task all the resources of the best mind. Routine and inflexible rules, whether self-imposed or dictated from without, will often stand in the way of the best results. The physician may be helped by the suggestions or example of others, but if he has not sufficient intelligence and humanity to be trusted with the care of his patients, the probability is that little will be gained by hedging him about with vexatious restrictions; if he has, they are more likely to do harm than good.

It is well that those who have the care of this most unfortunate and defenseless class should feel that abuses and neglect cannot pass unknown or unpunished, but public opinion, in such cases, should be not only a terror to evil doers, but a praise to them that do well. Nothing can be, in the long run, less for the interest of the insane than indiscriminate condemnation of all who are engaged in caring for them.

EDITORIAL NOTES.

HOME.

THE AMERICAN RHINOLOGICAL ASSOCIATION will hold its Seventh Annual Meeting at Chicago, Aug. 28, 29 and 30. The Committee on the Examinations of the Inmates of Insane Asylums will make their report on "The Relations of Rhinal Inflammations to Mind Affections" at this session.

LEPROSY IN NEW ORLEANS.—A despatch to the daily papers, dated July 21, says: Investigation of the case of the young man, James Kavanaugh, in Algiers, who is suffering from tubercular leprosy, discloses the fact that his companion and associate a few years ago was a man named

Mallegar, who resides in the Third District, near the mint. This man was afflicted with the loathsome disease and Kavanaugh was constantly in his company, at times ate with him and drank out of the same vessel that he did, and it is evident that he contracted the disease by so doing. There are now under observation several suspicious cases which the Board of Health will send a corps of experts to Algiers to inquire into.

THE STATE UNIVERSITY OF TEXAS will soon have a fine building for its Medical Department. Galveston recently appropriated \$25,000 towards its erection.

DR. HENRY M. HURD, of Pontiac, Mich., now Superintendent of the State Lunatic Asylum at Pontiac, has been appointed Superintendent of the Hospital of Johns Hopkins University.

THE TREATMENT OF SUNSTROKE.—Dr. Wm. F. Waugh contributes to *The Dietetic Gazette* the following: In true sunstroke we have succeeded best at the Medico-Chirurgical Hospital by giving antipyrin internally or by hypodermic, in doses up to 30 grains, and applying ice energetically, externally and in the rectum, until the temperature descended to the level of safety. The great majority of cases, however, are really of exhaustion, due to heat and free drinking, with consequent perspiration and loss of salts. Small doses of brandy, ammonia, wine of coca, selecting a really efficient variety, and hot coffee are efficacious at first; followed by a hot bath, hot beef-tea, quinine, or Huxham's tincture. The use of ice-water gives rise to unquenchable thirst. Free imbibition of fluids causes loss of appetite. An excellent beverage for Summer is thin oatmeal gruel, with salt, but no sugar, taken as hot as can be swallowed.

TENNESSEE MEDICAL EXAMINING BOARD.—*The Times-Register* says: Tennessee has now a Medical Examining Board, and the Governor with singular good judgment has given to the State Medical Society the privilege of recommending three members of this Board, he to nominate the fourth regular practitioner. Elected in such a manner the Board is likely to be both competent and just.

FOREIGN.

IN SPAIN the Sociedad Española de Higiene

has formulated an appeal to the authorities asking for the establishment of a public system of disinfection, and the rigorous enforcement of the measures for that purpose approved of by the Vienna Congress of Hygiene.

IN GREAT BRITAIN the recent election to fill the vacancies in the College of Surgeons caused by the retirement of Sir James Paget, Mr. Hulke and Mr. Heath, resulted in the return of the two latter gentlemen, who sought reëlection, and Mr. Howse. At the last meeting of the British Laryngological and Rhinological Association, Dr. Philip Smyly, of Dublin, was elected President for the coming year, and the following gentlemen were elected Honorary Fellows of the Association: Professor Voltolini, Breslau; Professor Massei, Naples; Dr. Solis-Cohen, Philadelphia; and Dr. Fauvel, Paris. Hundreds of applications have been received for the position of Director-General of the Naval Medical Reserve. *The Provincial Medical Journal* says: A boy recently died of hydrophobia near Bradford—at least so it was said at the Coroner's inquest; but, strange to say, the dog which inflicted the bite also appeared at the inquiry, sound and healthy, from which we draw the conclusion that the boy did *not* die of hydrophobia. The British journals are strongly advocating the study of shorthand by medical students.

PROF. FRANCIS CORNELIUS DONDEERS, the eminent ophthalmologist, died recently at the age of 71.

AN INTERNATIONAL COURTESY.—The *British Medical Journal* pays a well deserved compliment to Dr. John S. Billings, reciting the valuable work which he has accomplished and the honors to which he has attained. It is gratifying to the American profession that such an able man is numbered in its ranks, and to know that he is so well appreciated in other lands.

PROFESSOR BILLROTH completed his sixtieth year on April 26, but was absent from Vienna at the time. On his return the students and his friends prepared a splendid ovation for him. Dr. Sjsrgerwitch, Minister of Public Instruction of Servia, presented the Professor with the Grand Cross of the St. Sava Order, and the Vienna students presented him with a medal which bore on one side his portrait, with these words: *Theodorus Billroth, ætatis sue 1x*; on the other: *Medico*

artifici, viro optimi pictate conjuncti discipuli et sodales. Professor Billroth was also the recipient of several other distinctions on this occasion.

A PHILANTHROPIC PRINCE.—The Duke Charles Theodore of the house of Bavaria is well-nigh worshiped by the poor peasants about Meran, in the Austrian Tyrol, for his goodness of heart and his actual services in their behalf. They call him "the good Duke-Doctor." He annually offers his gratuitous help to the poor who have need of eye treatment. It is stated that this spring he, with an assistant surgeon, saw 1,091 cases, many of them surgical. Cataract operations to the number of sixty-eight were done, all of them primarily successful.

This is, indeed, princely conduct, and a remarkable improvement upon the kind of surgery done by many of his illustrious ancestors, whose work with cutting implements was chiefly limited to the field of battle; they were destructive in their intents and tendencies, he is reconstructive. And so he may be considered to mark a new era among the hereditary rulers of Europe.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Fortieth Annual Meeting. Report of Sections.

(Concluded from page 68.)

Section on the Practice of Medicine, Materia Medica and Physiology.

FOURTH DAY, JUNE 28, 1889.

DR. J. G. TRUAX, in his paper on *Ulcerative Endocarditis*, reported six cases only two of which were diagnosed before death, thus demonstrating the difficulty in diagnosis. The writer was inclined to believe that the disease was due to microorganisms, though such had not been discovered.

DR. MARY E. BALDWIN read a paper entitled *Stomach Rest and Cleanliness*, in which, with the reports of cases, was demonstrated the benefit derived from the method of washing out the stomach and the judicious management of diet. Measures were recommended for similar troubles in children.

DR. W. S. WATSON read a paper on *Addison's Disease*. After a thorough review of the pathology and etiology of the affection, a case illustrating its symptomatology and course was presented

to the Section by the essayist. A post-mortem had been obtained and an excellent specimen, demonstrating the changes in the supra-renal capsules, obtained.

Section on State Medicine.

FIRST DAY, JUNE 25, 1889.

DR. P. H. MILLARD, of Minnesota, Chairman, presented the *Report of Committee on Uniform Medical Legislation in the United States*.

Dr. Millard's subject was *The Legal Restriction of Medical Practice in the United States*. He finds this country sadly in need of good medical legislation. North Carolina was the first State to enact anything like satisfactory medical laws. He praised the State of Illinois for the work done in this direction, ascribing great credit to the efforts of the Secretary of the State Board of Health. As the results of hard work in Minnesota the relations have been so altered that now he is able to announce, for the first time, that the proportion existing between the medical profession and the general public is as 1 to 1,300.

The Committee in its report recommended that such legislation should be secured as would provide for a careful preliminary examination, a definitely prescribed course of study, an examination upon presentation of diplomas, and adequate power for the revocation of licenses.

In the discussion of the report DR. N. S. DAVIS entered an eloquent plea in support of the proposed measures.

DR. MILLARD said that a very carefully prepared law had been framed, and that it was hoped that the various States would enact similar legislation, so that the regulations for medical practice might be practically the same throughout the country.

DR. GIBON said that the most important consideration was the matter of preliminary education.

DR. SCAMMON, of Tennessee, agreed substantially with the views expressed by the others, but was in favor of having the State Board elected by the profession.

DR. ARMSTRONG suggested that Dr. Scammon misunderstood the matter, as the manner of constituting the Board was not set forth in the resolutions.

DR. STORER, of Newport, said that the whole matter had been a live question in Rhode Island for several years; that an irregular practitioner had been cleared of a charge of malpractice on the ground that a practitioner was only obliged to exercise a fair degree of skill and that the law did not require the physician to know very much. He was in favor of the proposed changes.

On motion the resolutions were adopted and committed to the general Association with the request that they be transmitted to the various States for their consideration.

DR. J. B. HAMILTON explained the disinfecting apparatus in use in New York, illustrating his remarks by means of a chart.

THIRD DAY, JUNE 27.

DR. HARVEY, of New York, read a paper on *Sanitary Disposition of the Dead*. He said: This subject is one that has long received the attention of the Association, but it has made little advance among the masses. Could a picture of what is going on below the surface of the earth in our graveyards be seen in contrast with the life above it would be disgusting and horrible in the extreme. Dr. Gross said that it took from forty to sixty years for the dead body to decay. In Paris frightful epidemics have been traced to their source in the cemeteries. In Italy experiments made by inoculation with germs from air polluted by the emanations from the dead produced typhus in animals. Gravediggers have been known to die almost immediately upon entering vaults where dead bodies were kept. The facts of water pollution by this means are well known. Cremation is of course extremely obnoxious to some, but a method of disposing of the dead has been discovered which, while effectual in the reforms desired, does not offend the sensibilities of the most delicate. This is the method of dessication, whereby bodies laid away in elegant mausoleums can be exposed to the action of hot, dry air, with the effect of removing, in the course of three or four months, all the more volatile elements of the body. In this way all danger of epidemics from this source is removed. The method is not open to the objection made by jurists to cremation, viz.: that it destroys all evidence of crime.

Discussed by Drs. Formad, of Philadelphia; Carrol, of New York; and Harvey.

DR. MARCY, Chairman of the Committee on *The Coroner System in the United States*, then made a brief oral report of the work accomplished. He said that the Committee had accumulated material enough for a good-sized volume. The existing laws, he said, are very objectionable, both from a medical and legal standpoint; in Massachusetts, Rhode Island, and Connecticut, however, he was glad to report that material improvements have already been made.

DR. G. H. ROHÉ, of Baltimore read a paper entitled *The Necessity for Sanitary Supervision of Schools*. Dr. Rohé directed attention to the fact that nearsightedness increases in proportion to the grade of the schools, both in regard to frequency and degree of severity, the condition being much more frequent and serious in the higher schools. The causes are largely dependent upon the arrangement of the seats and light. Large clear type and good paper should be used in all text-books. The relations as regards pulmonary consumption and spinal deformity were also considered, five-sixths of the cases of the

latter disease having been shown to begin during school life. Nervous and digestive derangements received attention from the reader, who advocated the cultivation of more muscle and less brain. Contagious diseases have sometimes to be met by temporary suspension of schools. Vaccination regulations are not well carried out. Heating and ventilation require adequate supervision. To secure the proper regulation of these important considerations an expert officer should be appointed whose duty it should also be to examine plans for school buildings; to inspect all buildings in use from time to time from an hygienic standpoint, to look after the proper vaccination of the pupils, to guard against the spread of contagious diseases, to enforce the adoption of text-books of suitable type. Such an inspector should be required to visit every room at proper intervals of time, to test the pupils' eyes every year, and to make reports once a year to the School Board. For such work an excellent hygienist is needed. Dr. Rohé in his observations has found that School Boards are anxious to know just what their duties in these various directions really are.

Discussed by Drs. Schenck, of Kansas, and Lincoln, of Massachusetts.

Resolutions regarding the formation of a committee to inquire into the advisability of securing such legislation as Dr. Rohé had suggested were introduced by Dr. Lincoln.

The discussion was then resumed and entered into by Drs. Pinkham, of Massachusetts; Bell, of New York; and Gihon, U. S. N.

The resolutions were then adopted, and Drs. Lincoln, Rohé, Reed, and Pinkham were constituted a committee to take the matter in hand.

DR. CARROLL, read a paper on *Disposal of House Refuse*. He drew attention to the fact that the danger from excreta is chiefly after fermentation has taken place, and this danger is increased by the influence of certain diseases. Cess-pools and privy vaults are extremely dangerous to health. Disinfection of these by earth or charcoal is efficient, but impracticable in large cities. Such refuse may be rendered innocuous by spreading it on the ground in thin layers with free exposure to the air. House garbage, however, is the greatest bane we have to deal with. This should be burned, and much of it can be disposed of in the kitchen range.

DR. GIHON moved a vote of thanks to the reader of the paper, which was promptly carried.

DR. SWARTZ, of Rhode Island, read a paper on *The Control of Epidemic Diseases*. He believes that chemists, bacteriologists and veterinaries should be made assistants to the health authorities by which the means of controlling epidemics would be greatly strengthened. He described the spread of two epidemics in Rhode Island. In the first one he made bacteriological and other

examinations in various directions without finding the bacilli of typhoid fever, although the cases had been reported as of typhoid origin, but a water bacillus was found in the milk used by the sick, and was thence traced to its origin, in the water supply of the cattle. The pasturage was changed with the effect of checking the epidemic. He is of opinion that in this epidemic the poisoning may have been due to the formation of a ptomaine. The other epidemic referred to occurred in Providence, the origin was found in typhoid stools which had been thrown on the river bank.

Other papers were read by title.

SECOND DAY, JUNE 26.

[The discussions will be printed with the papers in the order in which they are published in THE JOURNAL.]

DR. J. B. LINDSEY, Chairman of the Section, delivered an Address on *Popular Progress in State Medicine*. (See page 73.)

DR. GEO. MINGES, of Dubuque, read an interesting paper on *Bacteriological Examination of Several Native Mineral Waters in the Bottled State*.

The author finds that the bacteriological examination of drinking-water has become more important than the chemical analysis. Water from pure springs is free from bacteria especially if it contains free carbonic acid. In bottled water there are often very many. These are derived chiefly from the corks and from unclean bottles. Sulphuretted hydrogen inhibits the development of bacteria to some extent. Aerated bottled water contains more bacteria than that which is not aerated. Bottles should be cleansed by boiling water or steam.

DR. CHAS. V. CHAPIN, of Providence, R. I., read a paper on *The Purification of Drinking-Water for Cities*.

Dr. Chapin discussed this subject in a very thorough manner, confining his remarks, however, mainly to the purification of water by filtration. He believes that domestic filters, with the exception of the very expensive Pasteur filter, are worse than useless. Sharp, fine sand is the best practical agent for use, and fresh sand is less useful than that which has been in use for some time, because after being in use for some time organic matter covers the particles of sand, and this serves to arrest the bacteria. Water has been filtered on a large scale, and in Berlin, London, and many of our own cities, water containing 11,000 microbes per ccm. before filtration has been found to contain only 179 after. The process of filtration on a large scale has been facilitated by the coagulation produced by the addition of a small amount of alum.

Discussed by Drs. Smart, U. S. A.; Mercer, of Syracuse; Minges, of Dubuque; Baker, of Lansing; Mercer and Chapin.

DR. N. S. DAVIS, of Chicago, presented the *Report of Standing Committee on Meteorological Conditions*.

As regards the Collective International Investigation of Disease he was obliged to say that the Committee had scored a failure, but in other lines of investigation he could say that he had accumulated a mass of valuable statistics. These were the results of observations obtained from the Signal Service, from a chemical daily examination of the atmospheric air, and from the reports of physicians as to the exact date of the beginning of attacks of acute diseases.

On motion the Section resolved to recommend that the Association continue the Committee, but that it be excused from the International Collective plan. It was also resolved to cooperate with the various State Boards of Health.

DR. A. L. BELL, of Brooklyn, read a paper on *Stamina*.

Dr. Bell stated that it was his object to reduce the importance of such expressions as susceptibility, heredity and predisposition. Health is something more than the mere freedom from disease. Immunity from disease is largely due to "stamina." People who live under conditions of life requiring little energy do not live to old age, and heredity is amenable to the same organic forces as feebleness of constitution in general. Offspring of poorly nourished parents are scarcely less liable to pulmonary consumption than the offspring of those affected with that disease.

The election of Section officers was then held. Dr. J. B. Hamilton, U. S. Marine-Hosp. Service, was elected Chairman, and Dr. F. S. Bascom, of Utah, Secretary.

DR. H. B. BAKER, of Michigan, read a valuable paper on *The Climatic Causation of Consumption*.

In a very extensive and elaborate consideration of this subject Dr. Baker laid down the following propositions: 1. Low moist ground tends to consumption. 2. Cold dry air has a similar tendency. 3. The bacillus is acknowledged as the proximate cause of the disease. In a somewhat elaborate argument, supported by a vast array of facts, the reader undertook to reconcile these apparently irreconcilable ideas. Dr. Baker illustrated his subject by a large number of tables with which his hearers were furnished. Not the least interesting of his statements was the one that whereas 73 per cent. of mankind are inoculated with tuberculosis, only 13 per cent. die of the disease.

Discussed by Drs. Flick; Lyster, of Michigan; Bell, of Brooklyn; N. S. Davis, of Chicago; Rives, of New York; Hibbard, of Indiana; and Minges, of Iowa.

DR. F. S. BASCOM, of Utah, read a paper on the *Climatological Characteristics of Salt Lake City*.

Dr. Bascom presented a very attractive picture

of the advantages offered by his city, it having proved itself to have the requisite qualities of dryness, equable temperature, moderate altitude, sunshine, and freedom from high winds and electric storms.

DR. BAKER criticised the author in that he had given only the *relative* and not absolute humidity, and had not supported his claims with tables of sickness and death.

Section on Ophthalmology.

FIRST DAY, JUNE 25.

The meeting was called to order at 3 P.M., Dr. C. E. FROTHINGHAM, of Ann Arbor, in the Chair.

The Chairman read an excellent address, in which he emphasized very strongly the necessity of discussing freely many questions in ophthalmology about which there is an apparent agreement, but which, notwithstanding, are unsettled. Various of these subjects were mentioned, and his suggestions were eminently practical.

DR. ROBERT TILLEY, of Chicago, read a paper on *What can we do to induce the Government to make the Census of 1890 contribute efficiently to a clear conception of the causes of Blindness.* After stating that Dr. Magnus had in Germany succeeded in obtaining reliable reports on the causes of blindness, and having enumerated these causes, Dr. Tilley strenuously advised that the same system be adopted in this country, and for this purpose he presented the printed blanks used by Dr. Magnus. The main object of the paper was to have an effort made to ascertain the causes of blindness and then attack them more intelligently.

Considerable discussion followed this paper, in which Drs. Connor, Scott, Jackson and Thompson took part. Finally it was moved and carried that a committee be appointed by the Chair to request the General Assembly to authorize the Section on Ophthalmology, together with the American Ophthalmological Association, to confer with the Census Committee. Drs. X. E. Scott, Robert Tilley and J. Chisholm were appointed on this Committee.

DR. A. E. PRINCE, of Jacksonville, Ill., read a paper on *The Prevention of Pain and the Improvement of the Stump following Evisceration of the Eye.* Having failed in preventing pain in the stump in five cases of evisceration, Dr. P. was led to try carbolic acid, applied to the anterior portion of the stump, with very good results. He had used the glass ball (artificial vitreous), but was not satisfied, and has finally adopted the system of filling the empty shell with iodoform and packing it in with cotton, and then inserting sutures. He is well satisfied with this method. Dr. Prince also exhibited a book for keeping the record of patients in such a way that they can be easily found and tabulated.

DR. JACKSON stated that Dr. Williams, of Boston, was the first to record a case of evisceration. Dr. Williams was thereupon asked to speak on the subject. He stated that he preferred evisceration on account of its safety. That for the prevention of pain he used cold-water applications; and that he was pleased with the result.

The third paper was read by DR. W. H. WILLIAMS, of Boston, on *Advances in our knowledge of some Cerebral, Ocular and Intra-Orbital Lesions which facilitate the Diagnosis and Treatment of Important Diseases.*

In this paper a number of very interesting cases of ocular disturbance produced by brain and kidney disease, which showed how important a part a careful examination of the eye plays in making a careful diagnosis of these diseases, for in many of these cases internal disease was not suspected until the ophthalmoscope revealed its symptoms in the eye. Dr. W. also reported some very interesting cases of blindness following facial erysipelas.

Discussed by Drs. Chisolm, Knapp, Leartus Connor and Noyes.

DR. J. L. THOMPSON, of Indianapolis, then read a paper entitled *Some Cases of Inflammation and Atrophy of the Optic Nerve, with Special Reference to Etiology and Prognosis.* After reporting a number of interesting cases and commenting on the difficulty of making a prognosis, and in tracing the disease to its origin. He read the following conclusions as the result of his observation: 1. Progressive atrophy with no evidences of former inflammation gives bad prognosis. If one is affected the other remaining for several months unimpaired, prognosis favorable for this eye. 2. In atrophies following pernicious intermittent fever, improvement sometimes takes place when least expected. Inflammation of the optic nerve resulting from violent exercise, disturbances in menstruation, etc., occurring in plethoric persons admit of very favorable prognosis. Inflammations of the optic disc caused by brain tumors often improve so much that one is liable to doubt his diagnosis or to modify views as to prognosis, but death is the result, with few exceptions.

This paper was discussed together with that of Dr. Williams.

It being quite late it was moved and carried that the reading of papers be postponed until Wednesday at 3 P.M.

The Committee for Nomination of Officers for the next meeting was appointed. Drs. X. E. Scott, A. E. Prince and J. Chisolm were placed on this committee.

The meeting then adjourned.

SECOND DAY, JUNE 26.

The meeting was called to order at 3 P.M., DR. G. FROTHINGHAM in the Chair.

DR. E. J. GARDINER read a paper on the *Non-*

Surgical Treatment of Strabismus Convergens. After stating its advantages, and making manifest the dangers of hasty operative interference, he reported twenty-five cases in which the only treatment used was correction of ametropia and atropine, the orthoptic measures having been omitted experimentally. The correction was over 50 per cent. of all cases recorded.

Discussed by Drs. H. Knapp, P. D. Keyser, J. L. Thompson, R. Tilley, G. Frothingham, S. C. Ayres, J. Chisolm and Geo. Stevens.

DR. LEARTUS CONNER then read a paper on *Tobacco Amblyopia*, which proved to be very interesting, because a full history was given of two cases, where the trouble supervened in total abstainers, one a gardener, the other a clergyman. Both were typical cases, and both recovered by leaving off smoking and using strychnia. Dr. Conner stated that he had not been able to find a well authenticated case of alcohol amblyopia where tobacco could be excluded, and believes that tobacco causes the trouble. He then propounded a number of questions about which different opinions are entertained by ophthalmologists, one of them the etiology of central scotoma.

Discussed by Drs. H. Knapp, Myles Standish, Noyes, P. D. Keyser, J. Chisolm, Blitz, and E. J. Gardiner.

DR. S. C. AYRES read a very instructive paper on *Tumors of the Optic Nerve*. After reviewing the literature on the subject he proceeded to give a history of two cases, with microscopical examination of the tumors. The first case was a little boy who presented all the characteristic symptoms of intraorbital tumor. It was removed and proved to be a myxosarcoma, which began in the connective tissue of the optic nerve sheath. The lad remains well. The second patient was a young lady, with a large-sized myxosarcoma of the optic nerve sheath. This young lady died six months after operation from typhoid fever. Dr. Ayres thinks that the majority of these tumors are of the myxosarcomatous variety, that they spring from the open nerve sheath, and that the prognosis is favorable.

DR. P. KEYSER reported two cases of this disease operated upon many years ago, who are still alive and well.

DR. J. A. LIPPINCOTT operated on a case four years ago. The lady is doing very well.

DR. THOMPSON stated that he saw Dr. Williams, of Boston, operate on one, and Dr. Hamilton, of Ohio, upon another, with good results.

DR. JULIAN CHISOLM then read a paper on *The needless and annoying Restraints after Eye Operations*. He stated that confinement in bed was unnecessary even in iridectomies and cataract operations. The dark room he had discarded, using for his cataract patients a moderately darkened room—a good daylight to make examinations of the operated eye. Antiseptics he thought

unnecessary if thorough cleanliness was enforced. For the eye bandage he has substituted the isinglass entirely, and obtains excellent results by following the more easy method. He does not restrict the diet, allowing the patients to indulge in their regular habits. The securing of the hands after cataract operations he considered entirely unnecessary.

The next paper being on the subject of cataract, the discussion was deferred until after it was read. Its title, *Glaucoma Fulminans after Operations*. The writer, DR. P. D. KEYSER, reported two cases in which, after a perfectly smooth and uncomplicated operation for extraction was performed, at the end of six days in one case, on the third day in the other, sudden and severe pain was felt, and when the eye was examined, the characteristic picture of glaucoma fulminans was discovered. The hæmorrhage in both cases was copious. In the first case the operation had to be postponed for a few days, and the result was a loss of sight; in the other case the iridectomy was immediately performed and good vision was restored. Dr. Keyser was at a loss to explain the cause. He recommended the opening of the posterior capsule.

Discussed by Drs. Ayres, Tilley, Jackson and Knapp.

The papers of the following gentlemen were called but, the writers being absent, were passed: Drs. Eugene Smith, of Detroit; Le Roy Dibble, of Kansas City; J. H. Thompson, of Kansas City; Dudley Reynolds, of Louisville, Ky.

On motion the hour of meeting for the next meeting was made 2:30 P.M.

The meeting then adjourned.

THIRD DAY, JUNE 27.

The meeting was called to order by the Chairman, Dr. Geo. Frothingham, at 3 P.M.

The Chairman announced that Dr. S. C. Ayers, of Cincinnati, had been elected Chairman, and Dr. E. J. Gardiner, Secretary, of the Section for the ensuing year and that the next meeting of the Association would be held at Nashville, Tenn.

DR. J. E. COLBURN, of Chicago, then reported *Two Cases of Complications Arising During Cataract Operation*.

In the first case, after making a perfectly smooth section of the cornea, and previous to making the iridectomy, the whole contents of the eye escaped. A grayish substance was afterwards discovered in the eye; on the following day a large hæmorrhage filled the eye.

The second patient was a man in good health. Mature cataract, central perception was very poor, peripheral perception good. While making incision noticed bead of vitreous, but succeeded in making iridectomy, and removing the lens with no further complication. While patient was resting quietly after operation he suddenly cried out

with pain. Examination revealed a condition similar to that of the first case. The eye was subsequently enucleated. A calcified ring was discovered around the optic nerve.

DR. KNAPP was then requested to report on his experience in opening the capsule while making the corneal section. Dr. K. complied with the request by reading a paper which he had prepared for the *Archives of Ophthalmology*. He stated that he had tried to open the capsule while making the corneal section in sixty-four cases. In sixty-one he had succeeded. In three he found difficulty. The first case in which difficulty was experienced was one of hypermature cataract. Dipped point of knife into capsule, but it did not cut and the lens would not come out. Made peripheral capsulotomy and extracted lens without difficulty. Healing without reaction, vision $\frac{2}{40}$. No secondary operation was made. 2. Point entered capsule but could not cut through, it being very tough. Had to draw the knife back, the iris fell before the knife and was cut. Iridectomy was performed, and some vitreous escaped. The wound healed kindly. Vision $\frac{2}{20}$. 3. Ordinary cataract, anterior chamber very shallow. Point of knife punctured iris, had to draw the knife back and cut iris. Healing took place without complication. Vision good.

The advantages of the operation are that it simplifies the operation by merging two steps into one, and that one instrument is dispensed with, thus diminishing the danger of infection. If the simple operation is performed the knife is the only instrument that enters the anterior chamber. The disadvantages are: That even under the most favorable circumstances the operation is difficult, by reason of the change in the direction of the knife. When the anterior chamber is shallow, the pupil narrow, or the cataract hypermature, the difficulties are much increased. Dr. Knapp thinks there is no cogent reason for the operation.

Then followed a lengthy discussion on many details of extraction of cataract and secondary division of the capsule, followed mostly in questions addressed to Dr. Knapp, which he answered. Our space does not permit us to give a full report of all these remarks. The principle questions were: Whether Dr. Knapp would perform secondary operation if the patient could read? Answer—Yes; because we should strive for the very best results obtainable. How soon after the first operation did he perform the secondary division? Answer—From three to six weeks, preferred a little more time to elapse. Sometimes it could be done after the thirteenth day. Was the operation performed by ordinary daylight? Answer—No; always by focal illumination, which is the only way to thoroughly illuminate the field and discover the best place for the incision.

A paper on *The Ametropic and their Relation*

to *Insufficiencies of the Recti muscles*, by Dr. Wright, of Columbus, O., and also one entitled, *Embolus of the Inferior Branch of the Retinal Artery Visible with the Ophthalmoscope; Disappearance of Embolus and Recovery of the Greater Part of the Field Under Massage and Nitrate of Amyl*, by Dr. H. Gifford, of Omaha, Neb., were read by title.

DR. J. E. COLBURN requested that his paper on *Insufficiencies of the Recti Muscles, with Report of Cases*, be read by title, because it was on the same subject as that of Dr. Stevens, of New York, and that he would report one of his cases in the discussion of Dr. Stevens' paper. Dr. Colburn's request was granted.

DR. G. T. STEVENS, of New York, then read a paper entitled, *Respecting the Determination of the Deviations in Strabismus and their Treatment*.

Several cases were reported illustrating the important part which the vertical deviations play in the production of strabismus, and also showing the importance of detecting these deviations. He then concluded by calling attention to the following principles here briefly stated and abridged:

Results of examination for strabismus should be expressed in angles and not in linear measurements. To this end diplopia must be recognized and the double images carefully located. In cases of moderate strabismus this can be accomplished, with patient and intelligent effort. Extreme cases should be converted into moderate cases for better observations. The relative position of the double images is sometimes contrary to well-known laws, and unless the surgeon is on his guard, may be misleading. These exceptional positions of the images should lead us to the conclusion that the case is probably one of hyperopia. The unequal tension of the two pair of superior and inferior recti is often responsible for an apparent converging or diverging strabismus. The standard operation for strabismus by reason of its disabling effect upon the severed muscle, is an obstacle to a perfect result.

Graduated tenotomies, in which no tendon is disabled from performing the full required rotation of the eye, combined with tendon resection of the opposing muscle, operations if need be to be made on several muscles should supercede the severing of the tendon completely.

DR. J. E. COLBURN reported the case of a brawny Irishman who had an apparent divergent strabismus due to hyperphoria. He operated and the divergent entirely disappeared.

Discussed by Drs. Jackson, Savage, Tilley, Connor, and Gardiner.

DR. A. BLITZ, of Indianapolis, Ind., read a carefully prepared paper reporting *A Typical Case of Ocular Irritation Caused by Chronic Rhinitis Relieved by Treatment of the Nasal Trouble*. In the discussion which followed, several gentlemen spoke, reporting interesting cases of this character.

The work of the Section having been finished, DR. FROTHINGHAM thanked the gentlemen who had so efficiently helped to make the meeting successful, both by the careful preparation of papers and by participation in the instructive discussions which in every case followed the reading of the papers.

On motion, a vote of thanks was tendered to the President and Secretary of the Section, and to the reporter of THE JOURNAL.

A vote of thanks was tendered to the Committee of Arrangements for their kind attentions in procuring such excellent rooms for the meetings of the Section, and the thanks of the Section of Ophthalmology was tendered to the Casino Club for allowing the use of their beautiful rooms for this purpose.

The meeting then adjourned.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

M. M. Germain Sée and Laborde on the Utility of the Exclusive Administration of Alkaloids extracted from Plants—Dr. Bouilly defends the Use of Pessaries—Dr. Mossé on the Re-plantation of Bones removed by the Trephine—An anonymous writer in "The Scalpel" on the Hemostatic Action of Cocaine—Dr. Doyon on the Action of Bromide of Potassium.

With reference to the debate that lately took place at the Academy of Medicine, M. M. Germain Sée and Laborde maintained the utility of the exclusive administration of alkaloids extracted from plants. The immediate principle, they say, is always *one*, identical in itself, invariable in its proper constitution, as in its fundamental, physiological and medicamentous action, the total matter which contains it is complex, variable in its composition as it is in its effects. Apropos of this subject, a writer in the *Gazette Hebdomadaire* remarks that while it may be admitted that the preparations taken from plants may contain divers alkaloids, it is precisely because the matter extracted from a plant is variable in its composition that its effects differ from the action exercised by a single alkaloid. As successively stated by M. M. C. Paul, Trasbot and Gariel, chemical analysis has not isolated, and never will isolate all the active principles which a plant contains. The latter contains not only crystallizable substances, but also soluble substances, and if it becomes possible to isolate all, it will still be difficult to combine and associate them to produce the therapeutic effect obtained in employing the plant itself. It may therefore be concluded that digitalis is an excellent medicament and which

produces effects very different from those which are produced by digitaline, that the extract or the tincture of aconite should be preferred to aconitine, that, in children it would be very dangerous to substitute emetine for ipecacuanha, in a word, the medical practitioner should know how to formulate, that is to say, in combining and associating the divers medicaments of which a long experience has demonstrated the efficacy. In illustration of the inconveniences of alkaloids, I may here cite the researches of Dr. Alfonso Montefusco, published in the *Giornale di Clinica*, in which the author states that scillitine has no diuretic property. It determines a diminution in the force and in the frequency of cardiac contractions as well as a lowering of the sanguineous pressure. Injections of this substance diminish the frequency and the force of the respiration. It has no action whatever on sensibility and on motility.

At the Société de Chirurgie Dr. Bouilly defends the use of pessaries and tried to prove that they are useful and that they are not dangerous. He would not, of course, defend the employment of those enormous pessaries that were formerly in use, but he would willingly adopt instruments, whether malleable or not, which, are made to measure, and which adapt themselves to the parts to which they are applied, such for instance the pessaries of Hodge and of Smith. Dr. Bouilly thinks that they are clearly useful in simple, mobile, retro-deviations, and that it would be dangerous not to maintain the uterus in position. Between doing nothing on the one hand, or practicing Alexander's operation on the other, which does not often produce satisfactory results, there is a treatment to institute, and that is that of the application of a pessary. Dr. Bouilly had already collected 84 cases of retro-deviation in which he employed this instrument and which always proved satisfactory. But to apply the pessary reduction must first be effected, either by the genu-pectoral or knee-and-chest position, or by the method of Schultze. In these conditions an instrument of good dimensions reestablishes the cul-de-sac of Douglas, the portion of intestine that was displaced will resume its normal position, and in directing the attention of the patient to the necessity of not allowing the bladder to get full, of avoiding shocks, pregnancy may take place, or the maintenance of the uterus in proper position may be obtained in eight or nine months of treatment. The danger is *nil* when the pessary is well applied, and accidents may occur only in cases where the instrument is too large, ill-chosen and badly applied to a womb imperfectly reduced. Only once did M. Bouilly see an ulceration in the posterior cul-de-sac, and it was healed up in a few days. It is, of course, understood that the posterior adhesions are a contraindication. M. Pozzi supports the opinion of M. Bouilly. M. Terrier

thinks that this question might be discussed for a long time, it is to experience that the demonstration of the fact must be left. As far as he is concerned, without having applied as many pes-saries as M. Bouilly, he thinks that this instrument is without any action, unless it acts by auto-suggestion analogous to a case he had reported at a previous meeting.

Dr. Mossé, of Montpellier, has published a note on the re-plantation, practiced with success, of fragments of bones removed by the trephine. These operations had been performed on rabbits, dogs and monkeys. The experiments consisted : 1. In re-plantations, on the same animal, of a rundle of the skull removed by trephining. 2. In the transplantation on an animal, of the same species, of a rundle of bone removed from the first subject. 3. In the transplantation on an animal of a different species. In all these experiments the crown of the trephine was applied to the bone, the periostem of which was scraped and turned over with the skin, without any precaution being taken to preserve the periosteum itself. After having replaced the bony rundle in position, the soft parts were simply reunited above the rundle by points of suture. After a certain time the animals were sacrificed, and it was found that in the greater part the osseous rundles were soldered to the neighboring tissue. These experiments had been practiced on man by Ewen, Barrel and Horsley. The results obtained by these experimenters would authorize one to think that a rundle trephined is susceptible of being grafted in the place it occupied before its removal.

An anonymous writer in the *Scalpel* on the hæmostatic action of cocaine, remarked that, for the last three years he had recourse to the subcutaneous injections of the hydrochlorate of cocaine to produce local anæsthesia, that after these injections there was no hæmorrhage, or at least the flow of blood was less than when he did not employ cocaine. From this fact the idea struck him that it would be a useful means against excessive hæmorrhages, which are sometimes difficult and long to arrest. With the view of correcting the flow of blood, the author tried the direct application to the bleeding surface, of pads of charpie imbibed in the following solution: Hydrochlorate of cocaine, 1 gram, alcohol, 5 drops, laurel-cherry water, 5 grams. He sometimes applied the powder of cocaine to the wound, at others he employed a subcutaneous injection of the same substance, in the neighborhood of the seat of hæmorrhage. The first mode of application succeeded in rapidly arresting a severe attack of epistaxis. Suppositories containing from 15 to 20 centigrams of cocaine have always succeeded in arresting persistent oozing of blood. Commenting on this note, Dr. Fano, in the *Journal d'Oculistique*, observed that this latter dose of co-

caine is not without danger. It is well known with what facility and rapidity is accomplished the function of absorption in the rectum.

Dr. Doyon, writing on the accumulation of the bromide of potassium in certain organs, states that this salt preferably accumulates in the central nervous system, which is not surprising, as it exercises its physiological action particularly on the nervous centres. It is found also in large proportions in the liver. A. B.

LETTER FROM SAO PAULO, BRAZIL.

(FROM AN OCCASIONAL CORRESPONDENT.)

Yellow Fever—Unprecedented Severity of Epidemic of 1889—Can true Yellow Fever pass the Coast Range and become Epidemic in the Uplands of the Interior?—Influence of bad Sanitary Conditions—Does Freire's Inoculation of the Attenuated Microbe Protect?—Sudden Deaths—Beriberi.

It is quite certain that since the epidemic which devastated Memphis in 1878, nothing has happened in the history of yellow fever so severe as that which has decimated Santos and Camfinas this year.

The epidemic in Rio de Janeiro presents few new features, and the frequency with which the city is visited by yellow fever, its commercial importance and rapid and frequent communication between it and the States, place the matter within easy reach of your readers. Not so with Santos and Camfinas.

Santos is, after Rio, the most important of the coffee ports. A city of about 20,000 souls, situated just within the tropics, it is almost entirely surrounded by water; in fact, at high tide it is completely surrounded by the sea. The business part of the city is but little above the tides and is cut off from the sea breeze by Mt. Serrate, a high point within the city limits. Some years ago drains were constructed under the streets to carry off the rain-water, but there is no system of sewers. During the last few years permission has been granted to householders to connect their privies and house service with these loosely built mains. No precautions whatever have been taken in the way of tide flaps on the lateral pipes, so that the incoming tide, which flushes the drains of the lower part of the city, carries back the accumulated filth, forcing poisonous gases back into the tide drains. The soil has become thoroughly impregnated with fecal matter, as the bricks at the bottom of the drains are laid without mortar. The city is supplied with drinking-water from the neighboring mountains, of excellent quality, but in quantity inadequate to the demands of the city. The present season has been noted for the almost total absence of rains, the heat has been intense and continued, for weeks and weeks, often reaching 36°C. in the shade and 54° in the sun. Under

these conditions it is not strange that yellow fever should make its appearance, particularly as the streets and tenements of the city have been full of the poorest class of Italian immigrants for months.

On the 14th of January a man who had not been out of the city was seized with yellow fever and died. From this case and date the disease spread over the city. Several cases about this time were landed from foreign steamers, and were taken to the hospital and died, but it is true that the first case *was not imported and had not been in contact with foreign shipping*. Early in February the inhabitants began to abandon the city, so that during the height of the epidemic not more than 10,000 or 12,000 remained. The deaths in the city, so far as can be ascertained, from January 14 to date, have been 1,238. This does not include those who died outside of the city who had been exposed before leaving.

It is difficult to estimate the proportion of deaths to the number attacked. At one time at least one-third of the whole population was prostrated with some kind of fever. As nearly as I could judge by visiting the hospitals and accompanying some of the most prominent physicians in their private practice during the height of the epidemic, about 40 per cent. of all the cases were different types of malarial fever.

The most striking feature of the epidemic both in Santos and Rio was the great frequency of sudden deaths, falling down in the street, becoming unconscious and dying in from two to eight hours. The native doctors call these cases of "*acceso pernicioso*"—pernicious attacks.

In the confusion and panic incident to an epidemic like the present one it is almost impossible to get at the real facts. The exact character of these cases "*fulminantes*" has not been determined; whatever it may be it is clear that it is *not* sunstroke, as these cases are strictly confined to the places where yellow fever is epidemic.

In the early days of the epidemic it was difficult to organize the medical or sanitary service. Temporary hospitals were opened, but, with the overworked doctors and entire absence of nurses, they were little more than convenient places to die in. In the public hospitals the death-rate was something fearful, probably 80 or 90 per cent.

So far as treatment was concerned it was mostly palliative. The physicians are divided into three classes: those who gave quinine in all cases, those who discriminated carefully between yellow and malarial fever and who never gave quinine in the former, and those who treated symptoms only. The treatment employed in the Garcia Hospital, at Havana, was tried with fair success by Drs. Miranda de Azevedo and Henschel. The influence of order and perfect organization under good conditions was strongly accentuated in the Portuguese Hospital; which, by the way, is a model hospital

under the very best of direction. Here Dr. Furtado lost only about 10 per cent. of the yellow fever cases. This physician does not use quinine in any stage, but after the preliminary treatment relies on alkalies and salicylate of soda, followed by perchloride of iron and iodine.

The disease at Santos and Rio has nothing particularly new about it, presenting about the same features as are found in the sweeping epidemics of our own country. But the outbreak at Camfinas is altogether new.

CAMFINAS.

This city is situated on the first plateau of Brazil, 2,250 feet above sea level and 160 kilometres from the coast in a straight line. It is somewhat lower than the range of mountains that separate it from the coast. The city is in a sort of basin surrounded on three sides by low hills. The population is estimated at 20,000. The houses are built without any attention to requirements of health, and in the poorer quarters crowded with Italian emigrants, six, seven and eight families often occupying the same house. There is no attempt at drainage, each house having its own privy vault, often only a shallow excavation in the back yard in close neighborhood to the well. The cemetery is situated on the brow of the hill just above the town, and in the soft, porous earth it is fair to suppose that the wells get the full benefit of it. The heat in Camfinas is quite as intense as in Santos, the absence of rain more sensible because of the absence of the ocean or any other body of water. Under the old theory that yellow fever is a coast disease Camfinas would be safe from its ravages—but in spite of all theories it is true that it has this year been swept by the most destructive epidemic of yellow fever of which we have any account during the last half century.

On the 9th of February a German woman arrived in Camfinas from Santos with yellow fever and died in a Swiss bakery boarding-house. Within fifteen days the persons who slept on the mattress upon which the woman had died were taken sick and died also. The family nearly all died, and many of the customers of the bake-shop. About the same date a child was taken ill with what was supposed to be a bad type of bilious fever, in a house in which ten months before two persons had died of yellow fever contracted in Rio. The child died, and a competent physician pronounced it a case of genuine yellow fever. It is true, at all events, that other members of the family were taken down and died. From these two points the disease spread in widening circles until new foci were established in different parts of the city, spreading in time to every corner of the place. Violent discussions arose among the physicians as to the real character of the disease—some classified it as typhus, others as the black plague, others as the ictero-hæmor-

rhagic fever of the East. In the early days of the epidemic the clinical features of the disease were quite different from those of the fever raging in Santos. The temperature curves more abrupt, complete jaundice supervening on the second day, the thermometric record showing distinct intermissions, frequent cases of new invasion after entering upon a free convalescence, apthous sores in the mouth, rapid pulse, violent delirium, etc.—still showing many of the characters of yellow fever: the suddenness of the onset, the lumbar pains, the flushed face, injected eyes, and redness of upper thorax, tendency to hæmorrhage. Here and there, however, a clear and almost typical case of yellow fever was found. Very soon the large majority of the cases became unmistakably yellow fever. *Pari passu* with the development of the epidemic the ordinary malarial fevers began to assume a grave character, so that I would venture to say that 30 per cent. of the cases pronounced yellow fever were grave cases of remittent fever. I saw two such cases myself, both of which recovered, but one of which was attacked by genuine yellow fever afterwards. It was noticed that however severe an attack of either type of fever was, it conferred no immunity from the other.

The flourishing city was almost entirely abandoned; business was suspended and the inhabitant, including many of the physicians, fled for their lives, until not more than 3,000 remained, and neither medical advice, medicine, nor food could be had in the city. People who were recovering from the fever actually died of starvation. It seemed like one of the cities described in the times of plague in the middle ages. Soon, however, São Paulo went to the rescue. The provincial and the general government sent relief committees with supplies of food, medicines and nurses, and a systematic course of disinfection was instituted under Dr. Araujo Goes, who had been entrusted with the same work by the general government in Santos, aided by a corps of volunteer medical students from Rio. The epidemic reached its *auge* in April. During this month there were 893 deaths out of a population of not more than 3,000. The death-rate among the poorer classes was something frightful. I saw in one of the small tenements seven persons sick on three beds, in a room without a window, all Italians recently arrived.

BELEM DO DESCALVADO.

At this point, 350 kilometres from the coast, and 2,200 feet above the sea level, has up to date lost seventeen citizens from yellow fever, starting from a case which came from Camfinas. These cases are pronounced genuine yellow fever by physicians who are well acquainted with the disease; characterized by black vomit, jaundice, anuria and death. This city has the same un-

sanitary privies and wells in close contiguity and has been visited by the same heat and drouth. Its mean temperature in ordinary years being 20° centigrade. It has a mean during March and April of 30.5° centigrade.

RIO CLARO.

This city is 240 kilometres from the coast, and 614 metres above sea level. It has a population of 7,000, and is barely free from malarial fever, and has no system of sewers, but relies upon private sanitation; as usual, wells and privies are near neighbors. Yellow fever was brought in by the refugees from Camfinas and spread to the inhabitants. There have been twenty-three fatal cases among people who have not been out of town.

LIMEIRA.

Two hundred kilometres from the coast, 542 metres above sea levels, having last year a mean of 20.06° during March and April. This year an average temperature of 30° (centigrade) during the same period without rain. Fever was imported from Camfinas and spread to the inhabitants. Sanitary arrangements wretched as usual.

Now, while no one thinks that bad water, filthy privies, or bad drains, create or spread yellow fever, as numerous striking cases might be cited to prove that the disease was in the air, and carried by the air or by some solid substance, such as clothing, etc., still the conditions created by these bad sanitary elements contribute in some way to its getting a foothold, *as under the same climatic influences* the same conditions of heat and *absence* of moisture at the same altitude the disease has not obtained a foothold whenever and wherever the sanitary conditions were good.

This city of São Paulo, being only 40 miles from Santos, and receiving nearly half of its population as refugees, many of them arriving with yellow fever and dying here, having besides 12,000 Italian emigrants, recently arrived in Santos, and brought here after exposure to yellow fever, and many of these with the disease already developed, crowded into close quarters, has not had a single case of yellow fever that was not brought here from Rio or Santos.

Why this immunity? You must pass through São Paulo to get to Camfinas. Why should this disease pass São Paulo with a population of 50,000, and make its headquarters in Camfinas and the cities beyond? It is because these cities are clean, well drained and well supplied with pure water, and, in the case of São Paulo, well paved with clean granite.

There are numerous other points in the neighborhood of Rio that have been attacked by yellow fever, but while above the mountains they are in direct communication with an infected sea port by a water course. Such infections are not rare in the history of yellow fever epidemics,

but Camfinas, Limeira, Rio Claro, and Belem do Descalvado are out of the yellow fever range and form a new chapter in the history of the disease.

Dr. Domingos Freire came to Camfinas personally to superintend the inoculation of the people with his attenuated virus of yellow fever. Being obliged to return to Rio by the duties of his position, he left Dr. Angelo Simões in charge of the service. Up to the 7th inst., according to letter published, he had inoculated 630 persons, of whom only three had been attacked, and then in a mild form. The names and residences of these persons are recorded in the city offices, and are open for inspection and study.

In Santos, Dr. Barrata, a colleague and fellow professor of Dr. Freire, inoculated several hundred, chiefly among the foreign element, before the worst of the epidemic, and I am informed by reliable physicians, residents in Santos, that only a very insignificant number of those inoculated by Dr. Freire's method had yellow fever. These are significant facts in centres where, to escape an attack of the disease is the rare exception, and to have it, the rule.

Whatever may be said of the merits of Dr. Freire's attenuations from a scientific standpoint, these facts have a commercial significance not to be ignored. Whether he has found the microbe of yellow fever or not, or whether the fluid he injects contains the attenuated microbe or not, if it prevents yellow fever, or even if a large percentage of those inoculated escape in times of such sweeping epidemics as that of 1889, it deserves to be carefully investigated. Dr. Freire courts investigation. He, at least, has what is not always to be found among scientists, the courage of his convictions.

He seeks out the disease during dangerous epidemics, and in the face of his most determined opponent (Dr. Araujo Goes, who was sent by the government to Santos and Camfinas) makes the test fearlessly.

It is to be regretted that the gentleman who was sent out here by our government to investigate Dr. Freire and his method, could not have selected this season of the year for his studies, when yellow fever can always be found, and Dr. Freire is always at home.

So far as we can see in the scientific journals of the world that reach this distant point, Dr. Freire is on the top with his germ.

A disease which is rapidly coming into prominence now that the yellow fever excitement is subsiding, is beriberi, which, if it keeps on at the present rate, will before the year closes have a larger death roll than yellow fever. It is now almost epidemic in the prisons of the large coast cities, and also among the seamen of the marine.

S. Paulo, May 28, 1889.

NECROLOGY.

Henry F. Crain, M.D.

Henry F. Crain, M.D., a native of Walpole, N. H., was born September 22, 1810, the eldest son of Dr. Eleazer and Sarah Crain. At the age of 5 years his parents left Walpole and settled in the flourishing village of Springfield, Vermont, where he passed the greater part of his life. His father, a noted physician, pursued the study and practice of medicine and surgery during the remainder of his life, his death occurring in his 60th year.

H. F. Crain, after being well advanced in the common schools, completed the study of letters in the Springfield and Chester academies. Having decided to make the study of medicine and surgery his life work, he, under the able tutelage of his father and Dr. Amos Twitchell, of Keene, N. H., entered Dartmouth Medical College, attended the usual course of lectures, and was prosector to the professor of anatomy. He graduated, and commenced practice with his father in 1837. In 1838 he went to central Pennsylvania, where he practiced four years.

Having paid especial attention to gynecology, and believing that some mechanical design would be beneficial in the treatment of many cases of female complaints, he, in company with his father, invented the then famous spino-abdominal supporter, and for seven years manufactured and sold them to physicians and druggists; traveling in the eastern, middle and many of the western and southern states.

In 1849 he returned to Springfield, resumed the practice of medicine, and continued in active practice till 1882, when he removed to Rutland, Vermont, where in company with his son, Dr. M. R. Crain, by his ripe age, long experience, professional bearing, ready speech and affability of manners, he soon gained the confidence of a large and influential class of patrons, among whom he was appreciated to an extent seldom gained in so short a time.

He rarely neglected the wants of the sick, and was ever ready to alleviate the sufferings of his patients. Carefully investigating and diagnosing disease, he was prompt in the use of remedial agents.

He died March 16, 1888, after a protracted sickness, of eczema, complicated with disease of the heart. At the time of his death he was a member of the American Medical Association, Vermont State Medical Society, Rutland County Medical and Surgical Society, Rutland Medical Club and Connecticut River Medical Society.

In the death of Dr. H. F. Crain, the profession sustains a loss not easily repaired, the loss of one, who, during his long professional life, held strictly to the high dignity of the profession as taught and practiced in our regular schools and

colleges, never wavering from the true principle of medical ethics, discarding quackery, whether within or out of the profession. He was a critical observer of men and measures, of strong convictions, studious in keeping pace with the improvements in remedies or mechanical inventions for the better treatment of disease, testing every new element, giving rational reasons for approval or rejection. He had in his library books for reference from the most approved authors, foreign as well as American, of which he evinced a thorough knowledge, duly appreciating the great responsibility resting upon the profession which he so long and faithfully honored.

S. H. G.

MISCELLANY.

NEW YORK STATE MEDICAL ASSOCIATION.—The seventh special meeting of the Fifth District Branch of the New York State Medical Association will be held in Port Jervis, Orange Co., N. Y., on Tuesday, Aug. 27, 1889. For those who are willing to spare the time after the meeting, a beautiful and interesting carriage drive of seven miles along the Delaware river to Milford, Penna., is promised. All are urged to make an effort to attend this meeting as the following Committee of Arrangements are making every preparation to insure an interesting meeting, both scientifically and socially:

Drs. J. H. Hunt, of Orange Co., Chairman; W. B. Eager, of Orange Co.; M. C. Connor, of Orange Co.; T. W. Bennett, of Sullivan Co.; W. H. DeKay, of Sullivan Co.; J. A. Munson, of Sullivan Co.

W. T. Lusk, M.D., President.

E. H. Squibb, M.D., Secretary,

P. O. Box 94, Brooklyn, N. Y.

HEALTH IN MICHIGAN, JUNE, 1889.—For the month of June, 1889, compared with the preceding month, the reports indicate that pneumonia, tonsillitis and influenza, decreased in prevalence.

Compared with the preceding month, the temperature in the month of June, 1889, was higher, the absolute and relative humidity and the day and night ozone were more.

Compared with the average for the month of June in the three years, 1886-88, inflammation of kidneys was more prevalent, and cholera morbus, measles, and inflammation of bowels were less prevalent in June, 1889.

For the month of June, 1889, compared with the average of corresponding months in the three years 1886-'88, the temperature was lower, the absolute humidity was about the same, the relative humidity was more, and the day and night ozone much more.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of June, 1889, at 23 places, scarlet fever at 37 places, typhoid fever at 16 places, and measles at 19 places.

Reports from all sources show diphtheria reported at 1 place more, scarlet fever at 11 places less, typhoid fever at 6 places more, measles at 4 places less, than in the preceding month.

LETTERS RECEIVED.

S. A. Brewster, Creston, Ia.; Battle & Co., St. Louis, Mo.; Dr. S. Thompson, Toledo, Ia.; Dr. R. M. Wycoff, Brooklyn, N. Y.; Dr. G. H. Grant, Hanover, Ind.; Dr. R. C. Kedzie, Agricultural College, Mich.; Dr. James H. Buckner, Cincinnati, O.; Dr. Henry O. Marcy, Boston, Mass.; Dr. L. G. North, Tecumseh, Mich.; Dr. J. B. Hamilton, U. S. M. H. S., Washington; Dr. Thos. H. Manley,

New York; Dr. Irving C. Rosse, Washington; Dr. Robt. Newman, New York; Dr. G. W. McCaskey, Fort Wayne, Ind.; Dr. John N. Hess, New Marion, Ind.; Drs. Pease & Jones, Concordia, Miss.; Dr. S. T. Armstrong, U. S. M. H. S., Washington; Dr. Thos. W. Kay, Scranton, Pa.; Dr. R. Harvey Reed, Mansfield, O.; Dr. A. B. Hirsh, Philadelphia; Dr. D. Colvin Hyde, Clyde, N. Y.; Dr. E. M. Marbourg, Hudson, Wis.; Dr. Maris Gibson, Wilkesbarre, Pa.; Dr. M. Abel, Providence, R. I.; Dr. L. P. Bush, Wilmington, Del.; Dr. C. E. Winslow, Alberquerque, N. M.; Dr. A. Nash, Joliet, Ill.; Dr. S. C. Plummer, Jr., Beaver Creek, Minn.; Dr. Thos. Elliot, Worth, Texas; Fairchild, Bros. & Foster, New York; Dr. E. A. Christian, Pontiac, Mich.; Dr. O. T. Maxson, So. Evanston, Ill.; Dr. R. S. Knode, Omaha, Neb.; Dr. P. O. Hooper, Little Rock, Ark.; Dr. S. N. Sims, St. Joseph, Mo.; Dr. A. B. Newkirk, Falls City, Neb.; Parke, Davis & Co., Detroit, Mich.; Dr. H. O. Knoll, New York; Dr. E. Fletcher Ingals, Chicago; Dr. D. W. Prentiss, Washington; Dr. William H. Morrison, Holmesburg, Pa.; Dr. G. C. H. Meier, New York; Dr. C. S. Wood, New York; Dr. C. F. McGahan, Chattanooga, Tenn.; Dr. S. J. Jones, Chicago; Dr. James Orne Whitney, Pawtucket, R. I.; Dr. R. J. Duglison, Philadelphia; Dr. Howard Morgan, Westerly, R. I.; Dr. H. V. Sweringer, Fort Wayne, Ind.; Dr. J. B. Pellet, Hamburg, N. J.; Dr. J. F. Snider, Monroe Center, Ill.; Lorin F. DeLand, Boston; Health Restorative Co., New York; Dr. J. M. Bessey, Denver, Col.; Dr. E. R. Squibb, Brooklyn, N. Y.; Rev. Wm. R. Scott, Sterling, Kan.; Dr. Charles F. Southwood, Monroe, Mich.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from July 13, 1889, to July 19, 1889.

Capt. Louis Brechemin, Asst. Surgeon U. S. A., ordered to Illinois National Guards, near Springfield, Ill., during remaining portion of encampment. Par. 1, S. O. 159, A. G. O., July 12, 1889.

Lieut. R. R. Ball, Asst. Surgeon U. S. Army, is granted leave of absence for fifteen days. Par. 3, S. O. 87, Dept. of the Missouri, July 9, 1889.

By direction of the Secretary of War, the extension of leave of absence on surgeon's certificate of disability granted Capt. H. G. Bunton, Asst. Surgeon, in S. O. 22, January 26, 1889, from this office, is further extended two months on account of sickness. Par. 1, S. O. 162, A. G. O., July 16, 1889.

F. J. Ives, Asst. Surgeon U. S. Army, now at Ft. Lyon, Cal., will proceed to camp near Oklahoma City, I. T., and report to the commanding officer for duty, relieving Capt. W. C. Gorgas, Asst. Surgeon, who, when so relieved, is authorized to avail himself of the leave of absence granted him in par. 2, S. O. 84, c. s., Dept. of the Missouri. Par. 1, S. O. 87, Dept. of the Missouri, July 9, 1889.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Five Weeks Ending July 13, 1889.

Surgeon C. S. D. Fessenden, to proceed to Cairo, Ill., on special duty. July 8, 1889.

Surgeon W. H. Long, granted leave of absence for twenty-eight days. June 18, 1889.

Surgeon H. W. Austin, to proceed to Cairo, Ill., on special duty. July 8, 1889.

Surgeon Fairfax Irwin, granted leave of absence for ten days. July 6, 1889.

P. A. Surgeon F. W. Mead, granted leave of absence for thirty days. June 24, 1889.

Asst. Surgeon G. M. Magruder, relieved from duty at Baltimore, Md.; to report to the Supervising Surgeon-General for duty as acting Chief Clerk and attending surgeon. July 10, 1889.

Asst. Surgeon H. T. Goodwin, granted leave of absence for thirty days. July 8, 1889.

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ADDRESSES.

ADDRESS OF WELCOME.

Read at the Fortieth Annual Meeting of the American Medical Association, Newport, R. I., June, 1889.

BY HENRY E. TURNER, M.D.,
OF NEWPORT, R. I.

Mr. President and Gentlemen of the American Medical Association :

The honor of presenting to you, gentlemen, an Address of Welcome on this highly interesting occasion, on the part of the local faculty of Newport, is one which I duly appreciate, as a flattering mark of confidence on the part of my associates, and as an agreeable form of introduction to yourselves, to whom I am very largely unknown, having never, though often delegated by the Rhode Island Medical Society, had the satisfaction of attending a Session of the National Association, because, generally, of the great distances of the meetings from my place of residence.

Newport, as a resort for health or pleasure, is more or less familiar to you all, but its pretensions as a centre of wealth, and taste and culture, in days long past, and especially of medical interest, are not as familiar to your minds, as to those of the residents of this ancient and formerly metropolitan borough; a few remarks of an historical character, have therefore seemed to me appropriate to the occasion.

During the greater part of the eighteenth century, Newport was the theatre of a very extensive and lucrative foreign trade, which came to a conclusion at the Revolution by reason of its occupation by British forces for a long period, and the consequent interruption to trade, and removal of a large proportion of its population, and the absolute loss and waste of much of its capital, and the diversion of a large part of the balance to other fields of industry; so that at the conclusion of the war it presented a scene of desolation, dilapidated wharves and store-houses, neglected buildings, streets and dwellings and general decay, and an idle and poverty-stricken population in place of one characterized as formerly by all the marks of thrift and industry, and only feeble remnants of the elegance and style formerly exhibited, and in which, in the heyday of its prosperity, it had been preëminent.

One result of the wealth and hospitality, and high cultivation of the better classes of Newport society, was the inducement presented by constant familiar association with European capitals, to men of culture and refinement, to take up a temporary or permanent residence in Newport, whose natural attractions were then as now, highly appreciated; and we find, accordingly, a galaxy of names of medical men of European birth and education, who became identified with Newport in its palmiest days as practitioners of medicine, who left on the minds of their contemporaries and of several succeeding generations the impression of very high accomplishments and very profound wisdom, and the younger natives who had the benefit of their instructions and example, sustained the character which they had established.

Among the former the names are prominent of Vigneron, Brett, Fletcher, Moffatt, Haliburton, and Oliphant. Among the latter, Senter, Mason and others.

Dr. Morbert Felicien Vigneron, or as it was latterly written and pronounced Vigneron, was born and baptised June 2, 1660, in the Parish of La Ventie, Diocese of Arras, Province of Artois, France. He is presumed to have been in Newport early in the eighteenth century, having married Susanna Pierce in 1704. He died in Newport, at a very advanced age, having practiced with a very high degree of reputation, and was succeeded by two sons and one grandson in his practice and in popular esteem, insomuch that within fifty years of this time tradition had preserved his fame, and the old French doctor was often referred to by old people as one of the luminaries not entirely forgotten.

His son, Charles Antoine Vigneron, after thirty-five years' practice in Newport, in which he fully maintained the reputation of his father, died of small-pox in New York, in 1772.

His other son, Stephen, sailed as surgeon of a privateer in the old French war, after conspicuous service at Cape Breton, and the capture of Louisbourg, and was never heard of after.

The grandson, Stephen also, was a surgeon in the Continental Army, and died of typhus on board the Jersey, prison ship, in New York.

Dr. John Brett, a graduate of medicine at

Leyden, where he enjoyed the advantage of the instruction of the celebrated Boerhaave, came to Newport about 1743 and lived here for many years. He enjoyed the reputation of a highly accomplished physician, and a man of great scholastic and literary attainments.

Dr. William Fletcher came to Newport during the Revolutionary war as surgeon in the British navy, but was transferred to the army and retired on half pay, when he entered on the practice of medicine in Newport, in 1785, and died here March 9, 1788, having, as his epitaph relates, "lived like a gentleman and died like a philosopher." Dr. Fletcher was born in Lancashire, England, in 1742, and was, therefore, at his death 46 years of age.

Dr. John Haliburton came to Newport about 1760, probably, and married January 4, 1767, Susanna, daughter of Jahleel Brenton, Esq., of Newport, sister of Admiral Jahleel Brenton, of the British Navy. This connection gave him high social position, and identified him with the wealthiest and most influential family in the Colony, and his career was a most successful and brilliant one until at an early period of the Revolution, he came under suspicion of loyalist practices and became a refugee, and passed the rest of his life in Nova Scotia, dying there in 1807, æt. 69 years. He was the father of Sir Brenton Haliburton, an eminent jurist, and for many years Chief Justice of Nova Scotia.

Dr. William Hunter, said to have been a kinsman of the distinguished brothers, William and John Hunter, of Edinburgh, was a native of Scotland, and a graduate of Edinburgh University, then considered the centre of medical light. He was born in 1731, and died at Newport, January 31, 1777, from fever incurred in hospital service. He has been reputed to have been a refugee after Culloden, but if the dates are correct, he was too young to have acquired a medical education in 1746, when the rebellion collapsed, and too young to have incurred the penalty of rebellion, but the tradition has been a very tenacious one. He is supposed to have come to Newport about 1750. He soon acquired a prominent position as a practitioner in Newport, and in 1758 was elected physician and Surgeon-General of the Rhode Island troops, and served in the unfortunate expedition to Canada under General Abercrombie, and the subsequent more successful one under General Amherst, when the fall of Montreal closed the war, and Dr. Hunter returned to his practice in Newport, which was very successful.

In 1756, Dr. Hunter delivered in the State House in Newport, the first course of anatomical lectures ever given in America. September 13, 1761, he was married to Deborah Malbone, daughter of Godfrey, Esq., of Newport, by which he established an alliance with one of the most

influential and wealthy families in the Colony, and until his death he was a prosperous and successful man.

Dr. Hunter was active and very positive in his adherence to the cause of the Crown in all the troubles preceding the Revolution, and was consequently very obnoxious to the other party, but he died while the British forces were in possession at Newport, and in the full persuasion of the final triumph of the royal cause. He was outspoken in his denunciation of those he was pleased to style "the domned Rubbels."

Dr. Thomas Moffatt, a Scotch refugee, after Culloden, came to Newport, and practiced medicine with much reputation until 1765, when he became obnoxious to the people from his activity in the enforcement of the Stamp Act, and was driven away, but returned to Newport when it was in the possession of the British, and left on their evacuation, never returning. He was a man of high reputation. Dr. Senter was a student in his office.

Among the highly distinguished medical men who made Newport their residence in the last quarter of the eighteenth century, Dr. David Olyphant should not be overlooked. He was born in Scotland, at Pitheaoles, near Perth, and was a younger brother of Lord Olyphant and was heir to his title, which he never claimed having become thoroughly Americanized. He was in the Jacobite Rebellion of 1745, and escaped and came to Charleston, South Carolina, where he practiced for many years with great success and distinction. At the commencement of the Revolution he offered his services to Congress, and was appointed Director-General of the Southern Hospitals. He removed to Newport in 1785, and married his third wife, Miss Ann Vernon, here in 1786. He died in Newport in 1804, æt. 85 years. Dr. Olyphant was an esteemed member of the Society of the Cincinnati of Rhode Island, and emphasized his devotion to American sentiments by naming his son David Washington Cincinnatus Olyphant.

Among those who were in the settlement at Portsmouth, (upon the island of Rhode Island), in its first year, 1638, were Dr. John Clark and Dr. Robert Jeffreys.

By Act of the General Court of date September 17, 1644, at Newport,

"It is ordered that Mr. Robert Jeffreys shall be authorized to exercise the function of Chirurgie."

Mr. Jeffreys was active and prominent in the affairs of the settlement, but his claim as a medical practitioner is not otherwise alluded to, and as John Clarke was a signer of the original compact, and one of the first arrivals, and was a very much more important member of the body, and is not mentioned in the public record in his medical relation, the inference is that Mr. Clarke had the authority of a European University, while

Mr. Jeffreys depended on this act of the Legislature for his license to practice, and there is almost conclusive evidence, recently obtained by Dr. Storer through exhaustive inquiries made for him by Dr. Wm. O. Priestley, of Kings College, London, that Mr. Clark, who spent many years afterward in successful practice in London, was a graduate of the University of Leyden, then the most famous school of medicine in the world. He is entered upon the registry of that University in 1635 as "Johannes Clarq, Anglus."

Singularly enough in March, 1664, the year in which the Charter of King Charles II went into force, the General Assembly passed the following Act, viz.:

"WHEREAS: The Court have taken notice of the great blessing of God, on the good endeavors of Captayne John Cranston, of Newport, both in Phissick and Chirurgery, to the great comfort of such as have had occasion to improve his skill and practice, etc. The Court doe, therefore, unanimously enacte and declare, that the said Captayne John Cranston is lycenced and commissioned to administer Phissick and practice Chirurgery throughout this whole Collony, and is, by this Court, styled and recorded, Doctor of Phissick and Chirurgery, by the authority of this, the General Assembly of this Collony."

This, it is safe to say, was the first degree of M.D. ever granted and promulgated on this Continent, and we have no means of knowing what qualifications Mr. Cranston possessed or by what means the General Assembly ascertained them.

Dr. Cranston was born in Scotland in 1625 or 1626, and appears first on the Rhode Island Record in 1644, æt. about 19 years, and died in Newport, March 11, 1680. He was very conspicuous and influential in all the affairs of the Colony, and was Governor at his death. His son Samuel was also Governor from 1698 to 1727, 29 years, also dying in the office.

Dr. John Clarke, who was one of the first settlers and a signer of the Compact, was undoubtedly the most conspicuous and important of the Rhode Island founders. He was born in 1609 and died April 20, 1676, being at the time of exodus from Massachusetts 30 years of age.

Evidently Dr. Clarke was a potential factor, and an essential element in all the events which resulted in establishing and maturing the little Commonwealth which eventually comprised the settlements of Aquidneck, Providence, and Warwick, with the gradual annexation or re-annexation of Kings Province, now Washington County, always claimed by Rhode Island, but contested by Massachusetts and Connecticut, and finally of the Eastern towns in 1747, which had been attached to the jurisdiction of Plymouth Colony, which itself had been merged in Massachusetts since 1690. In all these transactions Dr. Clarke had been an effective agent, as he was in procuring the charter of 1663, which charter, under which the Colony, and State of Rhode Island and Providence Plantations was administered until

1843, confirmed by the royal authority of Charles II, the right of liberty of conscience to all living under it, in the most formal manner, even as it had been previously established by law under the former charter. Thus did the State of Rhode Island become the first political organization among men, having as its basis of organic law this vital principle of individual freedom.

Besides being thus important in the Colonial affairs, Dr. Clarke held high professional rank as a physician. He also was the founder and first pastor of the first Baptist Church in Newport, and it is a mooted point whether this did not antedate that in Providence, in which case it would be the first Baptist Church established in America. Dr. Clark was the faithful and diligent, and learned pastor of this Church until his death. His estate was bequeathed to three assigns for public purposes, as a perpetual trust.

Drs. Thomas and John Rodman, came to Newport in 1680; they were sons of Dr. John Rodman, of Christ Church Parish, Island of Barbadoes. Dr. John, after some years practice in Newport, went to Block Island, and after remaining there for several years, he settled on Long Island, where he has a numerous progeny. Dr. Thomas remained in Newport and died here, January 17, 1727, æt. 80 years and 16 days.

Two of Dr. Thomas Rodman's sons were physicians. Thomas lived and practiced in South Kingstown, R. I., where he has numerous descendants. Clarke remained at Newport where he died in 1752, æt. 53 years.

Two sons of Dr. Clarke Rodman were physicians, Walter and Thomas.

Dr. Walter Rodman died at Jamestown, in 1753, æt. 34 years, having practiced at Newport for fourteen years.

Dr. Thomas Rodman was born in 1726, was Freeman of the Colony in 1745. In 1759 he was elected surgeon of the Rhode Island Regiment in the service of the Crown, and in 1760 was re-elected. He was in the campaigns against the French and Indians on the Canada frontier during those two years, from which time his record is not known. So that from 1680 to 1760, not quite a century, the citizens of Newport were indebted to the Rodman family for continuous medical service. They were all esteemed members of the Friends' Society.

Among the sons of the soil who worthily succeeded the luminaries heretofore mentioned towards the close of the eighteenth century, were Drs. Senter and Mason.

Dr. Isaac Senter was born in Londonderry, New Hampshire, in 1753. Nothing is known of his boyhood. In early youth he became a student in the office of Dr. Thomas Moffatt, before spoken of as a Scotch refugee. Dr. Senter joined the Rhode Island forces, before Boston, at the beginning of the Revolution, and soon became surgeon

of a Rhode Island Regiment of the Continental line, and was in Arnold's department of Montgomery's unfortunate expedition to Quebec. In 1779 he left the service and returned to a practice which he had left in Cranston, R. I. Here he remained until 1780 when he came to Newport, and was the leading practitioner here until 1799, when he died at the early age of 44 years, having achieved a more brilliant fame, particularly as a surgeon, than has fallen to the lot of any other man in this community.

Dr. Benjamin Mason, a native of Newport, after studying with Dr. Senter, settled in Newport, and practiced with great success until his death in 1801, *æt.* 40 years. Dr. Ursher Parsons described him as at the head of his profession in Newport.

The faculty has been represented in the present century, in a manner not unworthy the example given in the two preceeding ones, by a most respectable body of men, one generation of whom passed away between 1830 and 1840, *viz.*; Dr. William Turner, Dr. Edmund Waring, Dr. David King, and Dr. Enoch Hazard, all of whom commenced practice with the century, to be succeeded by Dr. James V. Turner, Dr. Theophilus C. Dunn, who was an early Vice-President of the American Medical Association, Dr. Daniel Watson, and Dr. David King, Jr., Dr. Samuel W. Butler, and others, including some of those still in active life, who need not be mentioned in detail. There should be named Dr. Charles Cotton, who came to Newport about 1814, and formed a link between the first and second class, dying in 1870 at the ripe old age of 81 years, an age very much beyond any of his professional contemporaries.

Having said this much of the profession, I trust a few remarks, not especially pertaining to it, may be excused.

One of the most interesting episodes in Newport history was the arrival here of the distinguished Dr. George Berkely, the author of the "Minute Philosopher," in 1728. He had left Europe with the design of establishing at Bermuda a college for the education of the American Indians. Having abandoned this plan as impracticable, he made his abode for several years at Newport, where his influence was soon felt in the inauguration of a decided advance in literary culture, which eventuated in the founding of a literary association which afterward became the Redwood Library Association, an institution which at an early period held a high rank among the American localities of literary pretensions, and which gave to Newport the advantage of a library of a high tone at an earlier time than any other American town, not the seat of a Collegiate Institution. The original books in this collection were of the highest character.

Among the beautiful spots which adorn this Island, none is more beautiful than Butts' Hill,

at Portsmouth, and none appeals as strongly to the interest of all Americans, it having been the central point (Point d'Appui) of the battle of Rhode Island, fought on the 29th of August, 1778, and pronounced by Lafayette "the best fought action of the War." The site at present is marked by the remains, remarkably well preserved, of a strong fort erected by the British, but at the time of the action in possession of the Americans, and from which the most vigorous assaults of the British and Germans were successfully repulsed by the Americans, leaving them still in possession at the close of the day. But during the night the Americans made a most successful retreat across the bay, as was said, without the loss of a man or a pound of ammunition or stores. The expected British fleet arriving next morning surrounded the Island, and but for their timely retreat not a man of the American army would have escaped.

From the fort a most superb landscape is presented comprising the East and West Narragansett Bay and Mount Hope Bay, and exhibiting very distinctly all the lines of approach and retreat.

The failure of the siege of Newport and the capture of General Piggott's army of 7,000 men, which had seemed almost assured, and was defeated only or chiefly through adverse weather, was one of the bitterest disappointments encountered by Washington during the entire war, and bore very heavily on the scattered and impoverished population of the State, and especially on the Islanders who were generally refugees dependent on the hospitality of the already overburdened denizens of the mainland, and when, after the British evacuation, they returned to their homes, universal and indiscriminate desolation had usurped the place of their thrifty and comfortable farm steads, and houses, barns, fences and orchards, and everything capable of being used as fuel had been consumed to supply the garrison and residents. No accessible portion of the mainland being in possession of the British, and the British troops and German contingent are said to have suffered excessively from want of fuel, the winters during their occupation having been exceptionally severe.

From DeWarville's travels in America," 1788, page 80:

"I went from Providence to Newport in a packet boat. This journey might be made by land, but I preferred the water. We arrived in seven hours and a half, and during two hours we had contrary wind. This distance is thirty miles. We never lost sight of land, but it offers nothing picturesque or curious. A few houses, some trees, and a sandy soil are all that appear to the eye.

"The Port of Newport is considered as one of the best in the United States. The bottom is good, the harbor capable of receiving the largest ships and seems destined by Nature to be of great consequence. This place was one of the scenes of the last war, the successive arrival of the American, English and French armies left here a considerable quantity of money.

"Since the peace everything is changed. The solitude is only interrupted by groups of idle men standing, with folded arms, at the corners of the streets, houses falling to ruin; miserable shops, which present nothing but a few coarse stuffs, or baskets of apples, and other articles of little value; grass growing in the public square, in front of the court of justice; rags stuffed in the windows, or hung upon hideous women; everything announces misery, the triumph of ill faith and the influence of bad government. You will have a perfect idea of it by calling to mind the impression once made upon us on entering the City of Liege.

"Recollect the crowd of mendicants besieging us at every step, to implore charity; that irregular mass of Gothic houses falling to ruin, windows without glass, roofs of half uncovered; recall to mind the figures of men scarcely bearing the print of humanity, children in tatters, and houses hung with rags, in short, represent to yourself the asylum of famine, the rascality and the impudence that general misery inspires, and you will recollect Liege, and have an image of Newport."

The over-weening pride and affection, which a native Rhode Islander cherishes towards his natal soil and the time-honored traditions and institutions of the Commonwealth of his fathers, must to denizens of other States comprising many times its area and supporting many times its population, seem almost absurd, but patriotism is a sentiment which bears no relation to the magnitude of areas, or to the numerical features of populations. The Scot of the days of Bruce and Wallace yielded no tittle in his devotion to Scottish independence and in national pride to the adherents of the great monarchies of France, England, Spain, and the German Empire, and despite the overwhelming superiority of England in population, territory, and resources, defied for generations with dogged tenacity, all the power of her arms and all the guileful influence of her most astute politicians in the unstinted and unscrupulous use of her almost unlimited wealth. Corrupt as were many of the leading Scots, the great popular heart always beat responsive to the love of country and to the honor of the name of Scot. And the final union of Scotland and England was not the result of conquest on the one part and of submission on the other, but of equal and harmonious adjustment of all differences.

The circumstances surrounding the first settlement of Rhode Island and the earlier portion of its career, were such as to give a peculiar bias to the minds of the settlers, and to cultivate the tenacity of purpose and the stern energy which especially characterized the early Rhode Islanders, even when compared with the Puritan and other elements which were in no wise deficient in the same characteristics so necessary in struggling against the disadvantages of a rough and unthankful soil, a rigorous climate, and a savage and relentless population. Besides all these, the Rhode Islanders encountered from the beginning, and at every subsequent period the antagonism of the adjacent Colonies.

All three of the Settlements, Providence, Aquidneck and Warwick, were made by parties who

were refugees from Massachusetts, either expelled that jurisdiction or in fear of expulsion for the entertainment of opinions deemed heretical there, and particularly they held the opinion, which they directly promulgated and always adhered to, that in matters of belief every man is, and of right ought to be, his own judge. This doctrine, now accepted by all civilized communities, was then comparatively novel, and was long familiarly known as the Rhode Island doctrine or idea, and although not entirely new, had never so far crystalized into active power as to be enacted into authoritative form until adopted as their fundamental law by the General Assembly of Rhode Island, although understood by the settlers in their first informal agreement of settlement.

Every Rhode Islander, therefore, is peculiarly sensitive in relation to the sacredness of individual liberty, and no doubt this sentiment, in its excessive development, has often prevented the enactment of laws which may have been beneficial, but still we look upon it as calculated to have a beneficent influence, and the fact of its existence, which could hardly have failed to result from the relations referred to, will explain the excessive local feeling which belongs, of right, to a Rhode Islander.

The long delay of Rhode Island to accept the Constitution of the United States grew, in a great measure, out of this distinctive sentiment, and although unwise at that crisis argues no disparagement to Rhode Island patriotism, which has always made prompt and active response to all subsequent appeals as it had adhered to the struggle for independence under the stress of particularly severe and trying circumstances. I refer to the occupation, for a long period, of its principal town and seaport, and the suppression of its commerce, which had been its principal resource.

With the same warmth and singleness of heart, with which she has hitherto always responded to the call of duty, and with a full conception of the honor conferred on her, by your selection of her as your place of meeting on the present occasion, Rhode Island now opens its arms to welcome you, gentlemen of the American Medical Association, to all the enjoyments and conveniences which can be secured to you by willing hearts and active hands, and hoping that the most gratifying results may be derived from your deliberations, offers to you a warm greeting.

MME. DEJOINE KLUMPKE, an American lady married to a Frenchman, carried off her degree of doctress at the Faculty of Medicine, Paris, last Saturday, with high honors. The lady has distanced all her competitors in the medical field. She was a pupil of the late Professor Vulpian. She has also written several standard works on nervous pathology and won valuable prizes.

ORIGINAL ARTICLES.

THE TREATMENT OF FRACTURES OF
THE NECK OF THE FEMUR BY IM-
MEDIATE REDUCTION AND
PERMANENT FIXATION.

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The treatment of a fracture of the neck of the femur is always a source of anxiety to the surgeon. In many instances the diagnosis is attended by unusual difficulties and not infrequently a fracture of this kind is overlooked, even after what appears to have been a thorough examination, while at other times, for want of a correct diagnosis, patients have been submitted to a long and debilitating treatment when no fracture existed. Patients suffering from this injury are with few exceptions advanced in years and liable to succumb to complications incident to prolonged confinement in bed. The marantic changes in the tissues of the aged and in persons rendered prematurely old by hereditary or acquired causes are known to be antagonistic to a rapid repair of such an injury, while at the same time the anatomical conditions at the seat of fracture are such as are well calculated to retard, if not to prevent, the production of callus. With few exceptions our surgical text books and special work on fractures continue to advance the same ideas that have been prevalent for centuries concerning the process of repair in fractures of the neck of the femur, and assert that bony union is only possible if the line of fracture is completely, or at least, partially outside of the limits of the capsular ligament. Teachers and authors are so positive in their assertions that if the fracture is entirely intra-capsular a pseudo-arthritis is inevitable, that many cases of partly extra-capsular fractures have been treated on the expectant plan the same as intra-capsular fracture, and only too often with the same unsatisfactory result. The time has come when it is no longer admissible to make such a distinction in the lecture room, the text books or at the bedside. Experience and experimental research have demonstrated that the proximal fragment, in case the line of fracture is entirely intra-capsular, does not only retain its vitality, but if placed in accurate contact with the opposite fragment, either by impaction or by mechanical fixation it takes an active part in the production of callus.

In a paper read at the meeting of the American Surgical Association, in 1883, ("Fractures of the Neck of the Femur, with Special Reference to Bony Union after Intra-capsular Fracture," Transactions of the American Surgical Associa-

tion, vol. 1), I gave an account of fifty-four cases collected from different sources of bony union after intra-capsular fracture and in most of them the proofs in support of the assertion were so convincing that even skeptics on this subject would find it difficult to give to them a different interpretation. In the same paper I recorded the results of my own experimental work undertaken for the special object of demonstrating, if possible, that bony union after intra-capsular fracture is so seldom obtained, not so much on account of the anatomical peculiarities of the parts involved in the fracture as the inefficient treatment which is usually resorted to in its treatment. In the animals subjected to experiment the fracture was produced by making multiple punctures with a small drill through the neck of the femur entirely within the limits of the capsular ligament and fracturing the balance of the bone by forcibly rotating the femur inwards. Twenty-three fractures in so many different animals thus produced were treated on the expectant plan, or by simple fixation with a plaster-of-Paris dressing. The animals were killed from four weeks to three months after fracturing the bone, and the seat of fracture was carefully examined in every instance, but in none of them was I able to find any evidences of bony union. The best result obtained by this method of treatment was pseudo-arthritis by the interposition of a short ligament between the fractured ends. Discouraged by the many failures I finally resolved to secure accurate coaptation of the fragments by drilling a hole from the trochanter major through the entire length of the neck and well into the head and fastening the fragments together with an aseptic iron, bone or ivory nail. Eight such experiments were made on cats. In two suppuration followed the operation. In the rest bony union or union by an exceedingly short ligament without any displacement of the fragments was obtained. I will quote only two of the experiments for the purpose of illustrating the method of procedure and of showing the condition and appearance of the bone after permanent union by callus.

Experiment 27.—Adult Maltese cat; subcutaneous fracture of left femoral neck; fixation of fragments by means of bone nail made from compacta of tibia of an ox. Animal killed fourteen weeks after operation. Neck of femur only slightly shortened; capsular ligament nearly normal; ligamentum teres intact; vertical section shows a slight curve in the upper portion of the neck; the head being slightly depressed. Perfect and complete bony union, the spongiosa being restored nearly to its normal condition. No traces of bone nail or perforation.

Experiment 32.—Young cat; subcutaneous fracture of neck of right femur, direct fixation of fragments with bone nail. Animal killed four months after operation. During life function of

the joint was perfect; vertical section through the head; neck and upper portion of shaft, shows that the line of fracture must have been entirely within the capsule, as the capsular ligament and bone outside of it presented a perfectly normal contour and appearance. Accurate measurements show only a very slight shortening of the neck; the osseous tissue composing the interior of the neck more dense than in the opposite bone. Spongiosa restored to nearly its natural perfection. No traces of track of perforation or bone nail.

In no case did I feel crepitation after the fracture more distinctly than in this instance, and the sudden giving way of the bone the moment it was fractured was well marked, and was heard by all of the assistants, and as the post-mortem examination shows a perfect restoration of the continuity of the bone, I am firmly convinced that this specimen represents a typical and perfect recovery of union by bone after intra-capsular fracture of the neck of the femur. The results obtained by immediate transfixion of the fragments stand in direct contrast to those treated by external fixation. Bony union, or union by short ligament, was the rule, non-union the exception. In the treatment of all fractures the two cardinal indications are: *Firstly*, to bring the fractured surfaces into accurate coaptation as soon as possible after the accident, and, *secondly*, to maintain uninterrupted approximation by permanent immobilization. In these respects the treatment of fractures is governed by the same rules as the treatment of wounds of the soft parts. In the repair of all injuries the severed tissues should be brought as nearly as possible in the same relative position they occupied in their normal condition and to retain them in such position by temporary mechanical measures until the completion of the reparative process. By following this rule the normal regenerative resources inherent in the tissues are taxed only to a minimum extent and definitive healing is obtained in the shortest possible space of time. As union between the divided or severed parts can only take place by the interposition of new material, the product of a regenerative process in the tissues at and in the immediate vicinity of seat of trauma, and as this process presupposes the existence of a connecting bridge of new blood vessels, it is evident that the length of time required to secure union will be greatly modified by the width of the intervening space. It is somewhat strange that the customary treatment of fractures of the neck of the femur which has governed the practice of surgeons from time immemorial, still commands the confidence of the profession. For centuries these fractures have been treated by some kind of extension and imperfect immobilization. The favorite treatment of to-day consists of extension by means of the weight and pulley as devised by Gordon Buck, and fixation of the limb by a long

splint or two sand bags. The extension is applied for the purpose of counteracting muscular contraction, the cause of the shortening of the limb. If we consider the number and strength of the muscles which are inserted in the lower fragment, and which are the direct cause of the shortening, we can imagine the force requisite to overcome the longitudinal displacement. At best permanent extension by weight and pulley corrects the shortening only gradually and always imperfectly and never secures immediate reduction, the first and most important indication in the treatment of any fracture. As the upper fragment is short, sometimes not reaching beyond the niveau of the cotyloid cavity, is deeply located and not parallel to the long axis of the lower fragment, but nearly at a right angle to it, all means of fixation short of complete immobilization of the pelvis and the lower fragment upon it must fail in securing uninterrupted coaptation and perfect immobilization. The result obtained by the customary treatment have been such that no better proof need be advanced to demonstrate its inadequacy. The long confinement in bed which it necessitates has often proved a direct cause of death. Bony union of fractures within the capsule has only occurred in cases where impaction had taken place and where this means of fixation was allowed to remain undisturbed until union was completed, in all other cases a pseudoarthrosis proved to be the unavoidable result. In fractures outside of the capsule healing with shortening of an inch has always been considered an excellent result, and more frequently the shortening was in the neighborhood of two inches. The treatment by weight and pulley extension and splint fixations requires constant watchfulness on the part of the surgeon and those who are in direct charge of the patient. Extension continued for two or more months not infrequently is followed by serious, if not permanent, damage to the structures of the knee joint.

It is my purpose on this occasion to call your attention to the advantages to be derived from the treatment of fractures of the neck of the femur by immediate reduction and permanent fixation as compared with the treatment by the usual methods. The treatment I shall describe is equally well adapted for intra- and extra-capsular, impacted and non-impacted fractures. As it is no longer necessary, from a practical standpoint, to make a distinction between an intra- and extra-capsular fracture, I will only allude to a few diagnostic signs which indicate the existence of a fracture through the neck of the femur which should be sought for, and carefully considered before a positive diagnosis is made.

SYMPTOMS AND DIAGNOSIS OF FRACTURE OF THE NECK OF THE FEMUR.

Displacement after fracture through the fem-

oral neck is due either to the fracturing force, muscular contraction or simple gravitation. In incomplete and impacted fractures it is caused entirely by the fracturing force. A number of incomplete fractures have been reported by König, King, Jackson, and Billroth. These fractures are produced by crushing, not overbending. If the force is transmitted through the long axis of the femur the lower portion of the neck gives way and Adam's arch penetrates the cancellated tissue of the neck to a certain distance, thus shortening the lower border of the femoral neck, a condition which would give rise to slight adduction, but no shortening of the limb, and the upper border of the trochanter major will be found in normal position in reference to Roser-Nélaton's line. If incomplete fracture take place at the expense of the posterior portion of the neck the limb will retain its normal length, but the posterior margin of the trochanter major would be displaced slightly in a posterior direction and would be somewhat less prominent than on the opposite side. If in an exceptional case the fracturing force should be transmitted through the trochanter major in an opposite direction and would crush a portion of the bone on the anterior surface of the neck, the slight deformity produced would be the same, only that the trochanter would be found rotated in an opposite direction. In all incomplete fractures then, no shortening exists and the upper margin of the trochanter major corresponds to the Roser-Nélaton line. In complete but impacted fractures the displacement is caused entirely by the fracturing force and is commensurate with the amount of bone tissue crushed at the seat of fracture. As the fracture in these cases is complete, more or less shortening is always present. A fall upon the foot or knee, as a rule, will fracture the neck at its narrowest portion, and, if the fracture is complete, no impaction will take place, unless it follows as a secondary occurrence from transmission of force through the trochanter major. In such cases the impacting force acts at a right angle to the fracturing force. Experiments and clinical observations have shown that the majority of fractures of the femoral neck are produced by force applied in the direction of the axis of the neck by falls upon the trochanter major. It is also well established that in most instances the neck gives way at its trochanteric portion, and that the posterior wall is crushed or fractured first, impaction of the posterior wall is therefore the rule. Besides shortening, an impacted fracture of the neck is always attended by slight rotation of the limb in the direction of the impaction. For instance, if the force is applied laterally through the trochanter, and, as is usually the case, from before backwards the posterior wall fractures first and impaction takes place here, the degree of rotation of the limb in an outward direction will be

an indication of the extent to which impaction has taken place. In very exceptional cases, if, as has happened in a few instances, the fracturing force is applied against the posterior border of the trochanter major, the anterior wall of the neck is fractured first and impaction takes place at this point, an occurrence which is always indicated by the limb being rotated in an inward direction. In impacted fractures the upper margin of the trochanter major will always be found above the level of Roser-Nélaton's line, the outer surface of the trochanter is less prominent than on the opposite side and its posterior border is displaced backwards in the most common form of impaction with outward rotation of the limb. In complete fractures without impaction the displacements are due to active and passive causes. The shortening results from muscular contraction and increases with the restoration of muscular action, while the rotation outwards of the limb is due to the tendency of the limb to fall in this direction when in a condition of complete repose.

Method of Examination.—Injuries about the hip-joint of sufficient intensity to fracture the femoral neck in persons advanced in years should always be examined with the utmost care for evidences of fracture. Whenever possible a positive diagnosis should be made at the first examination. In some cases the symptoms are so characteristic that a correct diagnosis can be made almost on first sight, while in other instances all diagnostic resources must be exhausted before a correct idea of the nature of the injury can be obtained. To make a thorough examination all clothing as far as the chest must be removed and the patient placed upon an even, smooth, unyielding surface, either upon a table or the floor. Inspection will reveal the presence or absence of a bruise over the trochanter major. If present the location of the superficial contusion will indicate the direction of the fracturing force. Suggillations about the hip are suggestive of a deep-seated injury, and not infrequently they make their appearance over the groin and along the inner side of the thigh in a few days after a fracture of the neck of the femur. If the limb is strongly rotated outwards, and by its position dislocation of the hip-joint can be excluded, it is more than probable that the femoral neck is fractured. In all cases of fracture of the neck, there is an appreciable fulness in the fold of the groin corresponding to the seat of the fracture. This swelling is caused by the hinge-like projection of the anterior portion of the neck, effusions of blood or inflammatory products, and, lastly, by the overriding or impaction of the fragments. When impaction has taken place at the base of neck, the trochanteric portion of the femur is enlarged from implantation of the upper fragment. More swelling is present in extra than intra-capsular fractures, as in the former there is more

hæmorrhage and the bone injury is more extensive. Another witness which can be elicited by inspection in cases of fracture through the femoral neck, is a slight depression between the great trochanter and the crest of the ilium, a change in contour caused by relaxation of the fascia lata, as was first pointed out by Dr. Allis. This sign is most marked when the patient is placed in the erect position. The symptoms which have been elicited by inspection and gentle palpitation must be verified by careful measurements. The information furnished by measurements carefully made can be relied upon in arriving at positive conclusions concerning the nature of the injury. It is not only superfluous but positively harmful to search for positive symptoms of fracture, crepitus, preternatural mobility of fragments, and new point of motion, in these cases; all manipulations during the examination of a supposed fracture in this locality should be made with the utmost care and gentleness. The search for crepitus and other positive symptoms of fracture has been the cause of incalculable harm. In many instances careless handling of the limb has resulted in disjunction of impacted fractures, or in tearing of periosteal or ligamentous bands, thus removing the conditions upon which rested the possibility of obtaining osseous union by the interposition of a short ligamentous band. In every case care is to be taken not to disturb the parts at the seat of injury for the purpose of making a diagnosis; it can never become necessary to administer an anæsthetic for the purpose of making a so-called *thorough examination*. Our diagnosis should depend on the presence or absence of the three most important symptoms—position of the trochanter major, shortening and eversion. A line drawn from the tuberosity of the ischium to the anterior superior spinous process of the ilium is called the Roser-Nélaton line, and with the trochanter major in its normal position and relations marks its upper edge. If the measurements show shortening, and the femoral neck is fractured, the upper border of the trochanter major will be found displaced beyond the Roser-Nélaton line to the extent of the actual shortening. It has recently been shown by Wight, Hamilton, Gurson, and others that inequality in the length of the lower limbs is a rather common occurrence, consequently in order to eliminate sources of error, it becomes necessary to ascertain the presence of asymmetry, should such exist, in applying measurements in the diagnosis of a fracture of the neck of the femur. For the purpose of avoiding errors, which might accrue from asymmetry of the lower extremities, Wight directs that the following measurements should be taken: (1.) Inside measurements from the superior anterior spines of the ilium to the lower ends of the internal malleoli. (2.) Outside measurements from the superior anterior spines of the ilium to the

lower ends of the external malleoli. (3.) Measurements from the tops of the great trochanters to the lower ends of the external malleoli. (4.) Measurements from the bases of the tibiæ to the lower ends of the internal malleoli. (5.) Measurements from the superior anterior spines of the ilium to a line drawn transversely in front between the top of the great trochanters. These measurements give the length of the femur and tibia on each side as well as the entire length of both limbs, and if asymmetry of any of the bones exists this fact is easily determined. If actual shortening is found the existence of a fracture of the femur below the hip-joint is excluded by ascertaining the exact relation of the great trochanter to the Roser-Nélaton line, if the trochanter is found displaced upwards to the extent of the shortening and other symptoms point to fracture, the diagnosis of a fracture through the femoral neck may be considered as established. In very fleshy persons the landmarks which serve as points from which the measurements are made are not well-defined and not easily located, and it is on this account advisable to fix the location of each as accurately as possible and indicate it on the surface by a pencil mark before any of the measurements are made. The best instrument for making the measurements is a steel tape-line, with feet and inches marked on one side, and centimetres and millimetres on the other. Eversion is readily detected by inspection. In impacted fractures it may be very slight and a sudden or gradual increase of these displacements, days, week, or months after the accident, signifies that disengagement of the fragments has taken place, an accident probably caused by inflammatory osteoporosis and imperfect immobilization. If the surgeon has demonstrated by his examination that a fracture exists, the presence of impaction can be readily ascertained by gently rotating the limb upon its axis and by making slight traction; if these manipulations affect the head of the bone, impaction has occurred, and every care should be exercised to preserve the mutual fixation of the fragments. Unimpacted fractures of the neck of the femur seldom give rise to any difficulty in diagnosis. The symptoms attending them are so well marked that a correct conclusion can be reached without causing needless suffering or inflicting additional injuries in searching for any of the positive signs.

Treatment.—The treatment I shall advocate in fractures through any portion of the femoral neck consists in the fulfillment of two principal indications: (1.) Immediate reduction. (2.) Permanent fixation. The first part of the treatment, the adjustment of the fragments, is of course only necessary in non-impacted fractures. In impacted fractures no attempt should be made to correct any of the displacements, as the interlocking of the fragments secures the most favor-

able conditions for bony union to take place. It is not too much to assert that if the impaction in such cases can be maintained until the reparative process is completed, union by callus would be the rule, and non-union the exception. In all intra-capsular fractures, union is effected exclusively by the production of an intermediate callus, from the broken surfaces; nature's splint, the external or provisional callus, for well-known anatomical reasons, is always wanting, hence the mechanical support which is requisite to maintain uninterrupted coaptation has a more important and prolonged application than in the treatment of fractures in other localities. The time required for bony union to take place in fractures of the femoral neck is an unusually long one. Gurlt fixes the time at from 56 to 207 days, and the average duration at 84 days. Dupuytren estimates the time from 100 to 120 days, and states that it has been customary at the Hôtel-Dieu to keep these patients in bed for 80 to 100 days. There can be no doubt that many cases, which promised well from the beginning, terminated unfavorably from failure on the part of the surgeon to secure efficient means of fixation or by abandoning the treatment too early. An impaction may become disengaged after a few weeks spontaneously or by a slight movement of the patient if the fragments are not immovably fixed by some efficient external mechanical support. To guard against such an occurrence, the retentive measures should not be removed for at least 80 to 100 days. In impacted fractures the fragments have been placed in the best possible condition for bony consolidation, and the object of treatment consists simply in preserving the mutual penetration for a sufficiently long time to obtain restoration of the continuity of the bone. Permanent fixation of an impacted fracture in the position in which it has been placed by the accident is necessary for the following reasons:

1. It prevents disengagement of the fragments.
2. It obviates secondary shortening and eversion during the stage of interstitial absorption which attends inflammatory osteoporosis.
3. By keeping the injured parts at rest, it serves as a prophylactic measure against the accession of arthritis and para-arthritis.
4. It enables the patient to leave the bed any time after the dressing has been applied, and thus guards against decubitus, hypostatic pneumonia, and other affections incident to prolonged confinement in bed.

The advantages arising from immediate reduction and permanent fixation in fractures of the neck of the femur are the following:

(a.) The untorn portions of the joint structures are replaced at once into their normal relations; a procedure which cannot fail to influence favorably the circulation in vessels which may have escaped injury.

(b.) The sharp and irregular margins of the broken surfaces act as irritants to the surrounding soft tissues; immediate reduction, by placing the fractured surfaces at once into mutual coaptation, acts as a preventive agent against the superintention of undue inflammation in and around the hip-joint.

(c.) With coaptation the process of repair is initiated at once, the blood and exudation material between the fragments act as a temporary cement substance, and at the same time serve a useful purpose in re-establishing the interrupted circulation.

(d.) Perfect reduction and permanent fixation prevent muscular spasm and diminish pain.

My experimental work convinced me so strongly of the not only possibility, but the probability, of obtaining bony union in cases of intra-capsular fractures, provided the fractured surfaces are kept in uninterrupted contact for a sufficiently long time, that I was led to suggest what justly appeared at the time as heroic measures in securing this end. It appeared to me impossible in cases where no impaction had taken place to insure sufficient immobilization of the fragments without some direct means of fixation. I suggested at that time the advisability of immobilizing the lower fragment by means of a sharp steel pin, regulated by a set screw passing through the centre of a curved steel bar, incorporated in the plaster-of-Paris splint over the fenestrum, in such a way that the sharp point of the pin would perforate the soft parts over the centre of the great trochanter, and by penetrating a small distance into the bone, could make the necessary lateral pressure and secure perfect immobility of both fragments. As still a more direct means of fixation of both fragments, I advocated that in some cases it would be justifiable to secure transfixion of both fragments by an ivory or bone nail which was to be driven through a perforation made with a drill, from the outer surface of the great trochanter through the centre of the neck and well into the head of the bone. The result of my experiments convinced me that this means of fixation answered an admirable purpose in placing the fragments in a position where union by callus could take place. The specimens illustrating this treatment demonstrated that such nails, if aseptic, and in aseptic tissues, are completely removed by absorption during the time required for bony union to take place. These suggestions were dictated by an honest conviction that any less direct measures would fail in accomplishing the desired result. It is only natural that this plan of treatment was objected to as being utterly inapplicable in most cases, and too heroic in all. Clinical experience has since satisfied me that these direct measures are unnecessary, and that the same object can be obtained by well regulated lateral pressure in the direction of the axis of the

femoral neck combined with perfect fixation of the lower fragment upon the pelvis. The influence exercised by impaction in determining the ultimate result in fractures within the capsule of the hip-joint, has been repeatedly alluded to. Many fractures of the femoral neck are kept from becoming displaced for a variable period of time, by interlocking of the denticulated broken surfaces, a condition which has been termed by Bigelow "rabbeting." Believing that the surgeon should imitate the reparative resources of nature wherever it is possible to do so, it occurred to me that artificial rabbeting could be produced in all cases by uninterrupted lateral pressure. It is not difficult to conceive that if the fractured surfaces are placed as accurately as possible in apposition, lateral pressure would effect perfect approximation and a mutual interlocking of the fragments. Lateral pressure thus applied is one of the most efficient means in preventing secondary, lateral and longitudinal displacements. Pressure, to be effective, must be applied in the direction of the broken neck, that is, directly over the trochanter major, and in such a manner as not to interfere with the superficial circulation. Pressure with belts and strips of adhesive plaster encircling the whole pelvis, can exert but little, if any, influence on the fractured bone, at the same time it impedes the superficial circulation. In the more recent cases of fracture of the neck of the femur that have come under my observation, I have pursued the following plan of treatment.

The patient is dressed in well-fitting knit drawers and a thin pair of stockings. For strengthening the plaster-of-Paris dressing over the joints, and at other points where greater strength is required oaken shavings are placed between the layers of plaster, these small thin splints greatly increase the durability of the dressing without adding much to its weight. The bony prominences are protected with cotton before the plaster-of-Paris dressing is applied. The drawers and stockings furnish a more complete and better protection to the skin than roller bandages. Usually about twenty-four plaster-of-Paris bandages are required for a dressing. The fractured limb is first encased in the dressing as far as the middle of the thigh, when the patient is lifted out of bed by two strong persons, the physician supporting the limb so as to prevent disengagement of the fragments if the fracture is impacted, and to guard against additional injuries in non-impacted fractures. The patient is placed in the erect position, standing with his sound leg upon a stool or box about two feet in height; in this position he is supported by a person on each side until the dressing has been applied and the plaster has set. A third person takes care of the fractured limb which is gently supported and immovably held in impacted fractures until permanent fixation has been secured by the dressing.

In non-impacted fractures the weight of the fractured limb makes auto-extension which is often quite sufficient to restore the normal length of the limb; if this is not the case, the person who has charge of the limb makes traction until all shortening has been overcome, as far as possible, at the same time holding the limb in a position so that the great toe is on a straight line with the inner margin of the patella and the anterior superior spinous process of the ilium. In applying the plaster-of-Paris bandages over the seat of fracture, a fenestrum, corresponding in size to the dimensions of the compress with which the lateral pressure is to be made, is left open over the great trochanter. To secure perfect immobility at the seat of fracture, it is not only necessary to include in the dressing the fractured limb and the entire pelvis, but it is absolutely necessary to include the opposite limb as far as the knee, and to extend the dressing as far as the cartilage of the eighth rib. The splint, which is represented by figure 1, is incorporated in the plaster-of-Paris

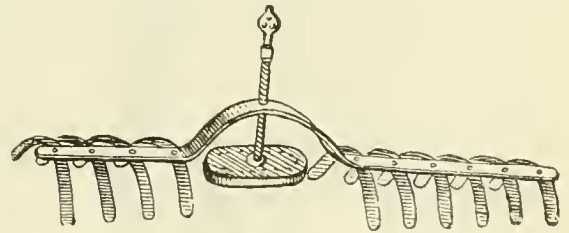


FIGURE 1.

dressing, and must be carefully applied so that the compress composed of a well-cushioned pad, with a stiff unyielding back rests directly upon the trochanter major, and the pressure which is made by a set screw is directed in the axis of the femoral neck. The set screw is projected by a key which is used in regulating the pressure. Lateral pressure is not applied until the plaster has completely set. If the patient is well supported and the fractured limb is held immovably in proper position, but little pain is experienced during the application of the dressing. Syncope should be guarded against by the administration of stimulants. As soon as the plaster has sufficiently hardened to retain the limb in proper position, the patient should be laid upon a smooth, even mattress, without pillows under the head, and in non-impacted fractures the foot is held in a straight position, and extension is kept up until lateral pressure can be applied. The lateral pressure prevents all possibility of disengagement of the fragments in impacted fractures, and in non-impacted fragments it creates a condition resembling impaction by securing accurate apposition and mutual interlocking of the uneven fractured surfaces. No matter how snugly a plaster-of-Paris dressing is applied, as the result of shrinkage in a few days it becomes loose, and

without some means of making lateral pressure it would become necessary to change it from time to time in order to render it efficient. But by incorporating a splint, as shown in figure 1, in the plaster dressing (figure 2) this is obviated, and the lateral pressure is regulated from day to day by moving the set screw, the proximal end of which rests in an oval depression in the center of the pad. From time to time the pad is removed and the skin washed with diluted alcohol for the purpose of guarding against decubitus.

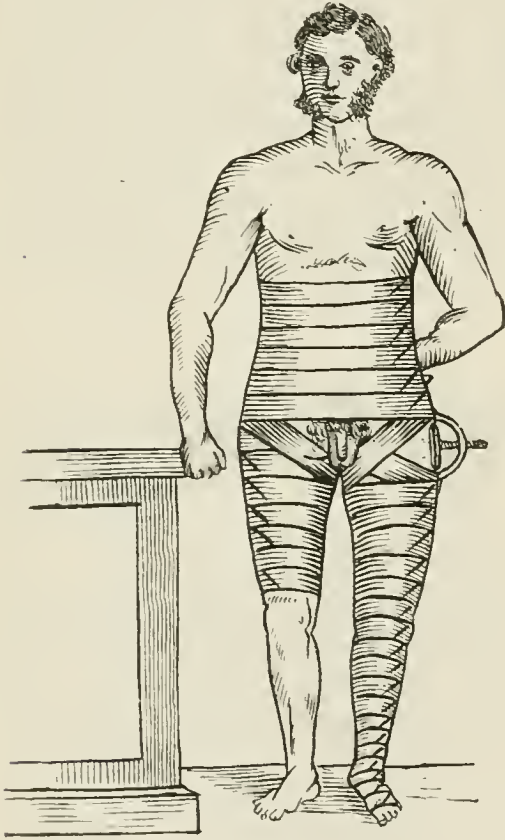


FIGURE 2.

After-Treatment.—If the application of the dressing, as just described, is a tedious, laborious and difficult task, it will prove a rich compensation for physician and patient during the after-treatment. I have never found it necessary to apply more than one dressing. If the fracture is properly reduced and the limb fixed in normal position in the dressing, then the only thing that requires watchful attention is the regulation of the lateral pressure. The patient can move himself in bed and can lie on the back, face, and on either side, and can be taken out of bed and, if the weather is favorable, outdoors daily if desirable, without pain or risk of displacement of the fragments. If necessary, a patient in such a dressing could be transported great distances without

any immediate or remote risks. The impunity by which the patient can change his position, the benefits to be derived from outdoor fresh air, are advantages which cannot be obtained by any other treatment, and to them must be attributed an important influence in the prevention of a number of the fatal complications which have so often figured as causes of death in patients suffering from fracture of the femoral neck. If the dressing has been well applied, and more especially if the precaution has been followed to protect the bony prominences with a layer of salicylated cotton, there is little or no danger of the formation of excoriations. At the expiration of eighty to one hundred days, the time required for bony union to take place, the dressing is removed, but the patient should be cautioned not to step on the limb until the end of the fourth or sixth month, when union will be sufficiently firm to sustain the weight of the body. As soon as the dressing is removed passive motion should be made, and the nutrition and function of the limb promoted by massage and, if considerable muscular atrophy is present, the use of the faradic current.

During the last six years the following cases of fracture of the neck of the femur have come under my observation, and were treated by immediate reduction and permanent fixation as detailed in this paper. A number of the cases occurred in the practice of other physicians, and I was only called in to apply the dressing. I desire in this place to express to them my sense of obligation for their permission to use the material in the preparation of this paper.

CASES OF FRACTURE OF THE NECK OF THE FEMUR TREATED BY IMMEDIATE REDUCTION AND PERMANENT FIXATION.

Case 1.—Female, æt. 68, in fair general health, slipped on the sidewalk and fell upon the right hip. The examination made a few hours after the accident revealed a contusion over the trochanter major, some swelling about the region of the hip-joint, limb everted, shortening of $1\frac{1}{4}$ inch. The displacement of the great trochanter above Roser-Nelaton's line corresponded with the extent of the shortening. No impaction. Crepitus elicited by the slightest movement of the limb. Anatomical diagnosis: Fracture of the neck of the femur partially within and partially without the capsular ligament. In this case reduction was made by placing the patient upon a pelvic rest and making extension. The limb could be brought down to within $\frac{1}{4}$ inch of its normal length, and in this position, with the foot in proper line, it was fixed in the plaster-of-Paris dressing, and as soon as the plaster had become firm lateral pressure by means of the pad and set-screw was applied. The patient suffered but little pain at any time, and could roll herself in bed from one side to the other with ease. The dressing was removed after three

months, when it was ascertained that bony union had been obtained with $\frac{1}{2}$ inch of shortening and the limb in good position. Passive motion and massage were now made daily and the patient was allowed to walk on crutches. Four months after the accident she was able to walk with the aid of a cane, and three months later she required no further mechanical support. At the end of a year recovery was complete and she could walk nearly as well as before the accident.

Case 2.—Male, æt. 65 years. Patient is somewhat anæmic and presents evidences of senile marasmus. Fell from a ladder a distance of about 6 feet directly upon his left side. No external contusion, and swelling over anterior aspect of hip-joint slight. A number of careful measurements revealed $\frac{3}{4}$ of an inch of shortening. Foot moderately everted. No impaction. Gentle traction upon the limb and slight rotation produces crepitus. After fractured limb was encased in plaster as far as the knee patient was made to stand with the sound limb upon a stool and was supported on each side by an assistant, while a third person made traction until the shortening was nearly corrected, and with the foot in proper position the fixation dressing was applied. Lateral pressure was applied the next day and was kept up carefully for eighty-five days, when the dressing was removed. A careful examination showed that bony union had taken place, and that the shortening did not exceed $\frac{1}{3}$ of an inch. The patient used crutches for six weeks, later a cane for a few months longer, and at the end of a year he walked well without any support and with only a slight limp.

In this case the symptoms after the accident pointed to a fracture of the neck of the femur involving more of the bone within than without the capsular ligament. Only a slight amount of callus could be found behind the posterior margin of the great trochanter.

Case 3.—Female, 58 years old. Senile marasmus well marked. Patient stumbled and then fell on right side. A few hours after accident the right foot was found everted and the limb shortened $\frac{2}{3}$ of an inch. No impaction. Right groin considerably swollen. Trochanter major displaced backwards and upwards. Probable seat of fracture partly within and partly without the capsule. Reduction was effected by auto-extension and traction upon the limb. After the limb was immobilized in the dressing the foot was in normal position and apparently little or no shortening. Fixation and lateral pressure were continued for three months. On removal of the dressing the union was found firm with $\frac{1}{2}$ inch of shortening. Patient used crutches for three months. Stiffness in the hip-joint was only overcome by regular active and passive exercise and massage continued for a long time. At the end of eight months the patient was able to take care of her household,

and the function of the limb was nearly restored. Measurements made at this time showed that the shortening had not increased.

Case 4.—Male, 50 years old, prematurely old, the result of intemperate habits. Patient slipped and fell on the doorsteps, fracturing the left femoral neck. Considerable swelling at the seat of fracture. Foot strongly everted, shortening $1\frac{1}{4}$ inches. No impaction. Trochanter major less prominent than on the opposite side and displaced upwards above Roser-Nélaton's line $1\frac{1}{4}$ inches. No impaction. On making extension and gently rotating the limb crepitus can be distinctly felt. Reduction and immobilization in the usual manner. The second day the patient had an attack of delirium tremens. During the maniacal excitement he tossed himself in every direction and the nurses were kept busy in preventing him from demolishing the dressing. It was during this attack that the fixation dressing and the lateral pressure gave evidence of their efficiency in maintaining uninterrupted coaptation under the most unfavorable circumstances. Under the use of narcotics the patient became rational and quiet on the third day. The dressing had to be repaired in several places. Subsequently the progress of the case was favorable. The dressing was removed after ninety days, when the fracture was found firmly united with nearly an inch of shortening; considerable callus in front of and behind the trochanter. The patient was soon able to walk around on crutches, but I have been unable to obtain any reliable information as to his condition since.

Case 5.—A female, weighing nearly 200 lbs., was thrown out of a buggy and fell upon her left side. After she recovered from the immediate effects of shock she found that she could not use her left leg. Two physicians who examined the patient soon after the injury suspected a dislocation of the hip, but made no attempts at reduction. When I examined her the next day I found marked eversion of the foot, and a number of measurements made showed $\frac{1}{2}$ inch of shortening. The great trochanter had been displaced beyond Roser-Nélaton's line to the same extent, and appeared to be less prominent than on the opposite side. No swelling in the groin or posterior aspect of the hip-joint. On gently rotating the limb the great trochanter described a smaller circle than on the opposite side, and the movements affected the head of the femur. Slight traction had no effect in diminishing the shortening. The diagnosis of intracapsular impacted fracture was based upon these symptoms, and every precaution was exercised not to cause disjunction of the fragments during the examination and the application of the dressing. As I was anxious to maintain the impaction during the required time for bony union to take place, the patient was treated in the same manner as in the

preceding cases, only that no attempts were made to overcome the shortening or to correct the other displacements. Lateral pressure was applied in a line with the axis of the outer portion of the femoral neck for the purpose of maintaining the impaction during the stage of inflammatory osteoporosis. The dressing was not disturbed for three months, when it was removed and the limb was found in the same position as when it was applied. The shortening had not increased. The patient was cautioned not to use the limb for another three months and to depend in walking entirely on crutches. For a long time the movements in the hip-joint were impaired, undoubtedly the result of a traumatic plastic inflammation of the structures of the joint. Passive motion and massage succeeded in restoring the normal functions of the joint. At no time could any callus be felt, which must be considered as another proof that the fracture was intracapsular. At the end of a year the patient walked nearly as well as before the accident.

Case 6.—A man, 65 years of age, slipped on an icy sidewalk and fell in such a manner that the right femoral neck was fractured. A few hours after the accident a considerable swelling had formed in the groin. Contusion over the great trochanter; eversion so marked that the outer margin of the foot rested on the mattress. Shortening $1\frac{1}{2}$ inch. No impaction. Crepitus on slightest motion of limb. Diagnosis non-impacted extracapsular fracture of the neck of the femur. Reduction was accomplished by auto-extension and traction on the limb. Fixation by means of plaster-of-Paris dressing and lateral pressure. Patient was relieved of pain as soon as the dressing had been applied and remained in good health during the entire treatment, which was continued for seventy-five days, when the dressing was removed. Bony union with $\frac{3}{4}$ of an inch of shortening. A large mass of callus on each side of the great trochanter could be distinctly felt. Crutches were used for four months. At the end of a year walked without any support and with only a slight limp.

Case 7.—A strong, healthy blacksmith was thrown from a buggy which was upset by an unruly horse. He fell in such a manner that his full weight came upon the right hip. Immediately after the fall he found that he was unable to use the right leg. He was conveyed in a carriage to his home some three miles distant, and examination two hours later revealed the following: superficial abrasion of skin over the great trochanter; marked eversion of foot. Shortening $1\frac{1}{2}$ inches; tip of trochanter some distance above Roser-Nélaton's line; right femur $17\frac{1}{4}$, and left femur $17\frac{3}{8}$ inches in length. Crepitus on extension and rotation of the limb inwards. New point of motion at seat of fracture very evident. Pain is referred to point immediately behind the

great trochanter. Considerable swelling in the groin and behind the great trochanter. The injury was diagnosticated as an extracapsular non-impacted fracture. Reduction by auto-extension was made on the third day and the fracture immobilized by plaster-of-Paris dressing in which the splint was incorporated for making lateral pressure. Patient suffered but little pain after the dressing was applied. The dressing was not removed for twelve weeks, when a large mass of callus was found behind and in front of the great trochanter, which for quite a long time seemed to impair the movements of the joint. With the disappearance of the callus the functional result improved. The fracture healed by bony consolidation with an inch of shortening. In six months he dispensed entirely with the use of crutches, and with a high sole on right boot to make up for the shortening of the limb he walks with only a very slight limp. In twelve months he was able to attend to his business, even to horse-shoeing, and has since, aside from the slight lameness, suffered no inconvenience from the accident.

Case 8.—An invalid lady, 61 years old, while descending three low steps caught the left heel in the skirt of her dress and fell, striking on the left hip. Examination soon after revealed the following *status præsens*: Dark blue discoloration of skin over the outer and posterior aspect of the great trochanter and from 2 to 3 inches below the hip-joint indicates the point where the fracturing force was applied. Slight eversion of foot. No swelling in groin or posterior aspect of hip-joint. Tip of great trochanter $\frac{1}{2}$ inch above Roser-Nélaton's line. On making measurements from anterior superior spine of the ilium to the internal malleolus no shortening could be detected, but the apparent discrepancy between the result obtained by these measurements and the Roser-Nélaton's test-line was subsequently explained by the other measurements, which showed asymmetry of the femora, the femur on the injured side being $\frac{1}{2}$ inch longer than its fellow on the opposite side. Left trochanter rotates on a shorter radius of a circle than the right. Pain in the hip increased by pressure over the great trochanter. Patient is able to elevate the limb about 2 feet from the bed, but all such efforts aggravate the pain. The symptoms in this case, as well as the manner in which the injury occurred, pointed directly to an impacted intracapsular fracture of the neck of the femur. In order to secure the benefits of long continued impaction during the process of repair immobilization of the fracture was secured by a plaster-of-Paris dressing and splint for lateral pressure. The general condition of the patient was not impaired by this kind of treatment of the fracture, and when the dressing was removed eight weeks after its application the limb was found in the same position as after the accident. The patient was directed to rely on crutch-

es for a number of weeks and then to use the limb cautiously. At the end of five months she could walk without a cane and with an almost imperceptible limp.

The treatment I have described I recommend for adoption in all cases where there is a reasonable hope that by it a bony union of the fracture will be obtained. It is superfluous to remark that it is not applicable in all cases of fracture of the femoral neck, and is positively contraindicated in cases of extreme obesity and debility, and in patients suffering from concomitant diseases which in themselves would lead to a fatal termination.

CONCLUSIONS.

1. From a scientific, prognostic and practical standpoint it is not necessary to make a distinction between intra- and extra-capsular fractures of the neck of the femur.

2. An impacted fracture of the neck of the femur will unite by bony union, provided the impaction is not disturbed and is maintained by appropriate treatment for a sufficient length of time for the fragments to become united by callus.

3. Impacted fractures of the neck of the femur should be treated by a fixation dressing consisting of a plaster-of-Paris case, including the fractured limb, the pelvis and the opposite limb as far as the knee, in which a splint should be incorporated by which lateral pressure can be secured in the direction of the axis of the broken femoral neck.

4. Unimpacted fractures of the neck of the femur, both intra- and extra-capsular, should be treated by immediate reduction and permanent fixation, so as to place the fragments in the same favorable condition during the process of repair as in impacted fractures.

5. Reduction is effected most readily by auto-extension and traction upon the fractured limb with the patient in the erect position, resting his weight upon the sound limb.

6. The fixation dressing should not be removed and the lateral pressure should not be discontinued for from ten to twelve weeks, the shortest space of time required for bony union to take place.

7. Patients who have sustained a fracture of the neck of the femur should not be allowed to use the fractured limb earlier than four to six months after the accident, for fear of establishing a pseudo-arthritis at the seat of fracture.

8. The functional result is greatly improved by passive motion, massage, and the use of the faradic current.

EUCALYPTOL IN HEADACHE.—Dr. M. J. Lewis states, in the *Medical News*, that eucalyptol, in doses of 5 grs., six times daily, is useful in headaches, particularly those of a congestive character.

AN INTRODUCTION TO THE STUDY OF PNEUMONIC FEVER.

BY EDWARD F. WELLS, M.D.

EIGHTH PAPER.

CAUSATION: PREDISPOSING INFLUENCES.

(Concluded from page 53.)

Cold¹ has long been recognized as one of the most energetic of the predisposing causes of pneumonic fever, although the proposition has been denied by some.² I have myself no doubt regarding the predisposing influence of exposure to cold and wet in the causation of the disease, and it is to this I attribute the preponderance of persons attacked whose habits and occupations lead to such exposure.

It was the impression of Laennec³ that cold, as a cause of pneumonic fever, was much less active when it temporarily followed excessive heat.

Thus "the Russian who rolls himself in the snow after coming out of the hot bath, or the baker who goes from his heated oven, almost naked, into an atmosphere below zero, is not liable to attacks of this disease."

I may add that I have seen iron and lead smelters, working in a superheated atmosphere, plunge, when heated and perspiring, into cold water, and they claim to be not more liable than others to attacks of this malady.

Exposure to cold is especially apt to be followed by pneumonic fever if the subject is depressed by

¹ Williams, *Lancet*, N. Y., 1862, Vol. ii, p. 3; Rindfleisch, *Path. Histol.*, Philadelphia, 1872, p. 423; Patton, *Jour. Am. Med. Ass'n*, Oct. 16, 1886, p. 425; Hourmann et Dechambre, *Arch. Gén. de Méd.*, T. xii, p. 29; Cruviellier, *Anat. Pathol.*; Fox, *op. cit.*, p. 158; Pinel, *Nosol. Phil.*, T. ii, p. 163; Heidenhain, *Virchow's Archiv.*, Bd. lxx, Howard, *N. C. Med. Jour.*, Feb. and Oct., 1859, and Jan. and Mar., 1860; Bateman, *Dis. London*, 1819, p. 234; Schützenberger, *Gaz. Méd. de Strassb.*, 1856, No. 2; Rigler, *Wiener med. Wochenschr.*, Méd. de Strassb., 1856, No. 2; 2; Riger, *Wiener med. Wochenschr.*, 1858, S. 534; DeBordes, *Nederl. Weekbl. voor Geneesk.*, 1855, Nr. 22; Warfvinge, *Am. Jour. Med. Sci.*, Jan., 1883, p. 261; Juergensen, *Ziemssen's Handb.*, Bd. v, S. 14; Niemeyer, *Spec. Path. u. Therap.*, Thompson, *Epidem. Catarrh.*, p. 109; Reuhle, *Berliner k. Wochenschr.*, 1884, S. 228; Flourens, *Jour. de Méd. Prat.*, August, 1829; Ziemssen, *op. cit.*, S. 139; Hertz, *Ziemssen's Handb.*, Bd. v, S. 360; Huss, *op. cit.*, S. 68; Lebert, *Klinik. d. Brustk.*, Tübb., 1874, Bd. i, S. 693; Frank, *op. cit.*; Campet, *Mal. des Pays Chauds*, p. 210; Chomel, *loc. cit.*, S. 322; Corney, *Lancet*, 1884, Vol. i, p. 810; Remy, *Arch. Gén. de Méd.*, Mar., 1883; Colles, *U. S. Naval Rpts.*, 1881, p. 415; Bonilland, *Die. de Méd.*, T. xiii, p. 359; Davis, *Rpt. Mich. Bd. Health*, 1880, p. 450; Rogers, *U. S. Naval Rpts.*, 1881, p. 471; Hildebrand, *Med. Prac.*, Vol. iii, p. 194; Grisolle, *op. cit.*, p. 147; Laennec, *op. cit.*, p. 225; Swett, *op. cit.*, p. 80; Hermann, *Lungenentz.*, S. 4; Andral, *op. cit.*, p. 284; Rilliet et Barthez, *Mal. des Enfants*, T. i, p. 115; Pinel et Richeteau, *Die. de Méd.*, T. xliii, p. 395; La-Roché, *op. cit.*, p. 347; Monro, *Path. Anat.*, Vol. ii, p. 247; Wood, *Prac. Med.*, Vol. ii, p. 42; Brutton, *Brit. Med. Jour.*, 1875, Vol. i, p. 204; Bristowe, *Lancet*, 1884, Vol. i, p. 382; Peter, *Bull. de l'Acad. de Méd.*, 1883; Stedman, *Boston Med. and Surg. Jour.*, Oct. 9, 1881, p. 507; Tessier, *Bull. de l'Acad. de Méd.*, 1883; Bossbach u. Aschenbrandt, *Med. Chir. Rundschau*, Wien, 1882, S. 51; Sée, *Bull. de l'Acad. de Méd.*, 1883; Boiles, *Boston Med. and Surg. Jour.*, Nov. 20, 1879, p. 736; Loudon *Lancet*, 1881, Vol. ii, p. 148; Lawson, *Edinb. Med. and Surg. Jour.*, Vol. lxii, p. 50; Snow, *Boston Med. and Surg. Jour.*, Feb. 24, 1876, p. 225; Bondet, *Bull. de l'Acad. de Méd.*, 1883; Despartes, *Mal. de St. Domingo*, T. i, p. 32; Mattocks, *Boston Med. and Surg. Jour.*, May 24, 1876, p. 527; Baker, *N. Y. Med. Rec.*, Sept. 10, 1887, p. 315; Drake, *Fevers*, Phila., 1854, p. 799; Flint, *Prac. Med.*, 1868, p. 182; Watson, *Prac. Phys.*, 1845, p. 73; Hirsch, *op. cit.*, S. 32; Heiss, *Inaug. Diss.*, München, 1857, p. 20; Jaccoud, *La France Méd.*, 1887.

² Sanders, *Am. Jour. Med. Sci.*, July, 1882, p. 91; Colin, *Traité des Mal. Epidém.*, Paris, 1879, p. 440; Laveran, *Mal. des Armées*, Paris, 1875, p. 49; Bäumer, *Berliner klinische Wochenschr.*, 1884, S. 288; Furjesz, *Wiener med. Wochenschr.*, 1884, S. 43; Sée, *L'Union Méd.*, Nov. 29, 1884.

³ *Op. cit.*, p. 225; see also Watson, *op. cit.*, p. 71.

hardships, want, despair, hunger debility, intoxication, etc. There are very few physicians who have not met with the disease in patients who had been exposed to cold after a debauch.

My experience has furnished a number of instances in which unusual exposure to cold and wet has been followed by an attack of pneumonic fever.

Many years ago, whilst as yet an undergraduate, I spent a few days in a small village in which was progressing a religious revival under the auspices of ministers who deemed baptism by immersion a necessary prerequisite for admission into the church. The weather was very cold and ice of several inches' thickness covered all the streams, nevertheless many embraced religion and were baptized, holes having been cut in the ice for that purpose. After the ceremony the hapless victims stood about, in their dripping and freezing garments, for a considerable time previous to their departure for their homes, which lay, in some instances, at quite a long distance. Being a stranger in the community, and having preserved no notes, I am unable to state either the number of persons immersed or the proportion subsequently attacked with pneumonic fever; suffice it to say that the number of those who sickened was so great as to be a matter of common mention in the community and to lead to the adjournment of the meetings until the weather should have become warmer.

In the summer of 1880 a farmer was exposed, whilst overheated and perspiring, to a shower of cold rain and hail. He felt chilly at once, became drowsy, and a few hours later had a profound chill followed by pneumonic fever.

Another man lay for several hours upon the wet and cold ground and was promptly attacked by the same disease.

Instances similar to these might be multiplied from my own records and from the published observations of others.⁴

Hertz⁵ considers the drinking of cold fluids at a time when the body is very warm a fruitful source of pulmonary congestions and inflammations, and I have met with several cases which seem to uphold this view.⁶ Cold baths, under like circumstances, are accompanied by similar dangers.⁷

A rheumatic patient, with high temperature, was treated by immersion in a cold bath. Pneumonic fever developed at once.⁸

A girl was given three cold baths on the twenty-first day of an attack of typhoid fever. Fatal pneumonic fever developed during the night.⁹

A manufacturer, aged 40, ill with typhoid fever,

was given a cold wet pack of two hours' duration, and was immediately attacked by pneumonic fever.¹⁰

The loss to the army of Alexander the Great, after their plunge into the river Oxus while the men were thirsty, fatigued and perspiring after a march of forty-six miles across the scorching sands of the desert, was greater than from any of its battles.¹¹

Although every writer¹² upon pneumonic fever is sure to mention cold as one of the predisposing (or active) causes of the disease, yet few have essayed to explain its action. The first effect of refrigeration upon the respiratory mucous membrane is to greatly contract the blood-vessels—rendering the surface pale and causing a sensation as if the lungs were torn asunder. This contraction is only temporary, the vessels gradually regaining their normal dimensions, and finally becoming greatly dilated, the color of the mucosa passing through all the shades of red, from pink to purple. The normal bronchial secretion is greatly diminished or suppressed with the contraction of the capillaries, but as these dilate it is restored and finally becomes excessive.¹³ How much of this effect is due to refrigerating shock and how much to the abstraction of moisture from, and the deposition of chloride of sodium upon, the walls of the air-cells and minute bronchi is not definitely known. We know that the air of a zero temperature is very dry as it enters the lungs, containing only $\frac{1}{2}$ grain of aqueous vapor to the cubic foot, whilst the expired air from the lungs, at a temperature of 98° F., is nearly or quite saturated with moisture and contains about 18 $\frac{1}{2}$ grains of vapor of water—18 of which have been abstracted from the mucous surfaces with which it has come in contact.¹⁴ This moisture is necessarily taken from the blood, and as it leaves the circulation holds in solution certain salts, especially sodium chloride, which are non-volatile and are left behind to irritate the mucous surfaces¹⁵ or afford a pabulum for the growth of infective germs.

In regard to the influence of fogs and cold damp air in the production of the malady, it has been suggested that the lungs may be greatly chilled by the abstraction of the heat necessary to convert into vapor the minute particles of water contained in such an atmosphere.

There is a very close connection between night air and pneumonic fever, as is shown by the numbers of cases following exposure to its influences, and the vast majority of instances in which the attack commences during the hours of the night. The preference which this disease shows toward attacking its victims at night has led some observers to attribute to ozone, which is then present

⁴ Ziemssen, *op. cit.*, S. 159; and many others.

⁵ *Op. cit.*, S. 360.

⁶ See Andral's—*op. cit.*, p. 169—forty-second case.

⁷ Peter, *Bull. de l'Acad. de Méd.*, 1883; Séé, *Ibid*; Bristow's *Lancet*, 1884, Vol. i, p. 382; Bondel, *op. cit.*

⁸ Carter, *London Lancet*, N. Y., 1881, Vol. ii, p. 148.

⁹ Stedman, *Boston Med. and Surg. Jour.*, Oct. 9, 1879, p. 507.

¹⁰ Bolles, *Boston Med. and Surg. Jour.*, Nov. 20, 1879, p. 736.

¹¹ Quintus Curtius; Diodorus.

¹² Brunton, *Brit. Med. Jour.*, Feb. 13, 1875.

¹³ Rossbach u. Aschenbraudt, *Med. Chir. Rundsch.*, 1882, S. 51.

¹⁴ Baker, *N. Y. Med. Rec.*, Sept. 10, 1887, p. 315.

¹⁵ This is not accepted by Seibert, *Berlin. K. Wochenschr.*, 1887.

in its maximum proportion, a causative relation to it.¹⁶

EXCITING CAUSE.

Formerly, in a large proportion of cases,¹⁷ the attack could not be referred to any obvious cause, and from this circumstance pneumonic fever is often said to be of spontaneous origin.¹⁸ That this conclusion is erroneous requires no argument. That there can be no effect without an adequate cause is an axiom of universal applicability, and it is no more reasonable to adopt the *de novo* origin of diseases, than to acknowledge the same doctrine of the origin of life or of matter. The term, unless used in a very restricted sense, should be expunged from medical writings. Not only must a given and unique effect proceed from an adequate cause, but such cause must be specific in its nature.

In the case of pneumonic fever we have a series of phenomena which, within certain limits, are unvarying, and which necessarily require for their production a single cause; of varying potency, infectious¹⁹ certainly and possibly contagious,²⁰ but always unchangeable in its nature. This specific *materies morbi* may be actively destructive, or it may be an agent acting by its mere presence—catalysis—and much research has been expended in the endeavor to discover and isolate it. To-day it is generally acknowledged that the poison²¹ must be a microscopic vegetable parasite. The acceptance of this proposition does not necessarily require the demonstration of the infectious material, for in this instance, as in so many others in nature, its existence is manifested and proven by its effects, both objective and subjective.

From the fact that pneumonic fever is ubiquitous we may infer that its essential cause is ever present²² in the atmosphere we breathe, and necessarily in the lungs, but that its onslaughts are successfully repelled, until a time when, through a variety of circumstances, the system can no

longer cope with the enemy and capitulates—a victim. This ready susceptibility of the system may follow some marked change in the subject or his surroundings, *e. g.*, becoming chilled from facing an east wind, or the conditions may not attract attention.

With the entrance into the system of this exciting cause there usually arises in some portion of the lungs, and possibly in some other organs,²³ an irritation which attracts an increased blood supply to the part and causes the exudation into the alveoli and connective tissue of certain constituents of the blood. The entrance of these germs into the system is not always and of necessity followed by an attack of the disease. It has been shown that when certain microorganisms enter the systemic circulation they are immediately surrounded and destroyed²⁴ and the debris is quickly extruded from the economy by the excretory organs. It is probable that this destructive digestion is favored by certain conditions of both the leucocytes and disease germs.²⁵

Various living vegetable formations are found in the exudation which fills the alveoli, in the secretions from the bronchial mucous membrane, in the substance of the inflamed tissues and in other parts of the body. That these organisms, although microscopic in size, have a very definite and intimate relationship to the pneumonic process is certain, and by a majority of pathologists²⁶ they are recognized as the *causa vera* of the disease, whilst others consider them only the scavengers of the malady, and yet another small contingent²⁷ think their presence accidental and in no wise essential.

¹⁶ Koch, Imp. Bd. Health Rpt., 1881; Eberth, Arch. f. k. Med., Bd. xxviii; Smith, N. Y. Med. Rec., May 14, 1887, p. 543; Leyden, Deutsche med. Woch., April 4, 1883; Fränkel, Ibid. Nov. 13, 1886; Pollock, Lancet, N. Y., 1883, Vol. ii, p. 101; Juergensen, Berliner k. Wochenschr., 1884, S. 270; Pushkareff, Ejenedelnais Klin. Gaz., April 21, 1885.

¹⁷ By a process of digestion.

¹⁸ For further information see Metschnikoff, Virchow's Arch., 1884, Bd. xcvi, S. 177, and Bd. xcvi, S. 502; Morris, N. Y. Med. Rec., June 4, 1887, p. 629.

¹⁹ Marriner, Lancet, 1882, Vol. ii, p. 237; Geike, Trans. Int. Med. Cong., Wash., 1887; Fränkel, Berliner k. Wochenschr., 1884, S. 271; Bond, Lancet, 1887, Vol. ii, p. 511; Moore, N. Y. Med. Rec., Sept. 10, 1887, p. 314; Leyden, Deutsche med. Wochenschr., April 4, 1883; Smith, N. Y. Med. Rec., May 14, 1887, p. 543; Jones, Jour. Am. Med. Ass'n, July 31, 1886, p. 114; Koch, op. cit.; Pollock, Lancet, N. Y., 1883, Vol. ii, p. 101; Didima, N. Y. Med. Rec., Sept. 10, 1887, p. 294; Friedlander, Fortschritte der Med., Sée, L'Union Méd., Nov. 29, 1884; Lester, Trans. Int. Med. Cong., Wash., 1887; Pushkareff, op. cit.; Shakespeare, Jour. Am. Med. Ass'n, Apr. 30, 1887, p. 478; Senger, Arch. f. Exp. Path., 1886, S. 519; Juergensen, Berliner klin. Wochenschr., 1884, S. 270; Smith, Brit. Med. Jour., July 1883; Garland, Pleurisy and Pneumonia 1888; Spiner and Stricker, Tuberculosis, etc., Wien, 1883; Klebs, Arch. f. Exp. Path., Bd. iv, S. 420; Kühn, Arch. f. k. Med., 1887; Griffin and Cambria, Giornale Int. di Scien. Med., iv, 5-6; Talamon, Bull. de la Soc. de l'Anat., Nov. 30, 1883; Nauwerck, quoted by Juergensen, op. cit.; Netter, Arch. Gén. Méd., Juillet, 1888; Koch, Centrabl. f. Chir., 1887; Formad, Jour. Am. Med. Ass'n, Apr. 26, 1884, p. 454; Frobenius, Berlin k. Wochenschr., 1884, S. 16; Whitaker, Jour. Am. Med. Ass'n, May 15, 1886, p. 538; Brenda, Berliner k. Wochenschr., 1884, S. 221; Jacob, Lancet, 1884, Vol. i, p. 758; Scott, N. Y. Med. Rec., Sept. 10, 1887, p. 294; Bermann, Jour. Am. Med. Ass'n, Aug. 14, 1886, p. 185; Afanasieff, Lancet, 1887, Vol. ii, p. 1131; Garré, N. Y. Med. Rec., Dec. 17, 1887, p. 764; Perret, Lyon Méd., 1887; Weichselbaum, Edinb. Med. Jour., 1887; Welch, Jour. Am. Med. Ass'n, 1888; Semmola, Trans. Int. Med. Cong., Wash., 1887; Thaon, Rev. des Mal. de l'Enf., Feb., 1886; Lebaschhoff, Lancet, 1886, Vol. i; Aufrecht, Deutsche Med. Zeit., Jan. 8, 1885; Prudden, N. Y. Med. Rec., Mar. 7, 1885, p. 273; Emmerich, Sanitary News, Nov. 12, 1887; et al.

²⁷ King, Jour. Am. Med. Ass'n, Aug. 14, 1886, p. 185; Claxton, Phila. Med. Times, June 17, 1882; Steruberg, Am. Jour. Med. Sci.,

¹⁶ Baker, Proc. Mich. Bd. Health, Oct. 1, 1886.

¹⁷ Flint, Prac. Med., 1868, p. 182; Fox, Reynolds' Syst. Med., Phila., 1880, Vol. ii, p. 157; Green, Quain's Dic. Med., p. 574; Swett, Dis. Chest, p. 79; Ziemssen, Pleuritis n. Pneumonie, 1862; Doubleday, N. Y. Med. Rec., March 28, 1885, p. 343.

¹⁸ Flint, op. cit.

¹⁹ Bermann, Jour. Am. Med. Ass'n, Aug. 14, 1886, p. 185; Flint, N. Y. Med. Rec., July 14, 1877; Hirsch, Handb. d. Hist. u. Geog. Path., Erlangen, 1864, Bd. ii, S. 26; Moore, N. Y. Med. Rec., Sept. 10, 1887, p. 314; Sée, Am. Jour. Med. Sci., Jan., 1885, p. 261; Virchow, Berliner k. Wochenschr., 1888, S. 113; Kühn, Arch. f. k. Med., 1887; Geike, N. Y. Med. Rec., Sept. 10, 1887; Heidenhain, Virchow's Archiv., Bd. lxx, 1877; Virchow, Berliner k. Wochenschr., Feb. 6, 1888, S. 113; and many others.

²⁰ Blythe, London Lancet, 1875; Conlthard, Cincinnati Lancet and Clinic, April 14, 1883, p. 353; Cullen, Prac. Physic., Phila., 1792, Vol. i, p. 152; Daly, Lancet, 1881, Vol. ii, p. 824; Krebs, Arch. f. Exp. Path., Bd. iv, S. 420; Bryson, Lancet, N. Y., 1864, Vol. i, p. 198; Fischer, N. Y. Med. Rec., July 28, 1888, p. 93; Netter, Arch. Gén. de Méd., Juillet, 1888; Morgagni, De Caus. et Sed. Morb., Ep. xxi, art. 26; Walton, U. S. Naval Rpts., 1879, p. 67; London Lancet, 1877, Vol. i, p. 324; 1878, Vol. ii, p. 266; 1881, Vol. ii, p. 824; 1882, Vol. i, p. 139; Rosse, Cruise of the Corwin, Wash., 1883, p. 16; St. Louis Med. and Surg. Jour., Dec., 1878, p. 350; Marriner, Lancet, 1882, Vol. ii, p. 237; Neal, Med. Digest, Sec. 667, 3; Kühne, Berliner k. Wochenschr., 1888, S. 337; Sturges, Pneumonia, p. 6; Wyman, Boston Med. and Surg. Jour., Dec. 15, 1881, p. 569; Bielinski, Medycyna, 1882; et al.

²¹ I here use the word "poison" in its broadest sense.

²² In greater or less quantity, in various stages of development and of variable potentiality.

Of these various organisms the one simultaneously discovered by Talamon and Friedländer, and known by the name of the pneumococcus, has attracted the most attention. It is an elliptical micrococcus, in length three times its thickness, found singly, in chains, spread out in a film or grouped in masses. It is surrounded by a capsule which does not stain³⁷ readily, and which disappears during cultivation, but reappears again when inoculated in an animal. It grows readily on gelatine at ordinary temperatures without liquefying the gelatine. When the inoculations in the gelatine have been made by a needle and to a considerable depth the resulting growth assumes a nail-shape, with an elevated and spreading head.

Originally Friedländer claimed that the peculiar mucinous capsule was the distinctive portion of the organism, but this has been denied by others, who contend that the encapsulated appearance witnessed by Friedländer was due to his method of preparation. Talamon made no mention of it in his original paper, and Friedländer himself, before his death, acknowledged that the capsule was not an important part.

Repeated cultivation changes its form so that it resembles a bacillus. Its vitality is destroyed by a temperature of 136.4° F.³⁸ It will not grow in a medium impregnated with the bacillus fluorescens putridus or its products, but the reverse does not hold good.³⁹

They are most abundant in the exudation matter filling the alveoli and in the bronchial secretions, but may also be found in the interstitial tissue, lymphatics, pleura, brain, kidneys and other organs.⁴¹

Other microorganisms may, because of their near resemblance, be mistaken for the pneumococcus. This is true of the micrococcus of erysipelas,³² the bacillus of whooping-cough,³³ the micrococcus of cerebro-spinal meningitis,³⁴ and one of the micrococci usually found in the buccal cavity.³⁵

July, 1885, p. 106; Salvioli, Arch. le Scienze Med., 1884, Vol. viii, p. 127; Purjesz, Wiener med. Wochenschr., 1884, S. 43.

³⁸ Staining fluid: Alcohol, 50; distilled water, 100; acetic acid, 10; sol. gentian violet, q.s. Immerse the specimen for 24 hours. Bleach in solution of acetic acid—0.1 per cent.—for one or two minutes. Dehydrate with alcohol and clear up with oil of cloves.

For further information consult Hueppe, Die Formen der Bakterien, Wiesbaden, 1886; DeBarry, Bacteria, N. Y., 1887; Crookshank, Bacteriology, N. Y., 1887; Satterthwaite, Bacteriology, Detroit, 1887; Fränkel, Bakterienk., Berlin, 1887.

³⁹ The degree of heat required to kill the germs of some other diseases is as follows:

Cholera bacillus of Koch.	125.6° F.
Anthrax bacillus	129.2 "
Streptococcus erysipelas	129.2 "
Typhoid bacillus	132.5 "
Streptococcus pyogenes aureus	136.4 "
Micrococcus Pasteurii	140.0 "
Tubercle bacillus	212.0 "

Garré, N. Y. Med. Rec., Dec. 17, 1887, p. 764.

⁴¹ Klein, Microorganisms and Disease, London, 1884; Salvioli, Natura infettiva alla pulmonite croupale, 1884.

⁴² Leyden, Deutsche med. Wochenschr., April 4, 1883.

⁴³ Afariaseff, Lancet, 1887, Vol. ii, p. 1131.

⁴⁴ Smith, N. Y. Med. Rec., May 14, 1887, p. 543.

⁴⁵ Pasteur Compt. Rend. Acad. de Sci., 1881, T. xcii, p. 150; Klein, Microorganisms and Disease, London, 1885; Claxton, op. cit.; Fränkel, Berliner klin. Wochenschr., 1884, S. 271; Sternberg, Am. Jour. Med. Sci., July, 1885, p. 106; Salvioli, op. cit.

The micrococcus of Friedländer³⁶ and Talamon³⁷ through a number of different kinds of animals? has been isolated by repeated cultivations and various animals, such as dogs, mice, rabbits, etc., have been inoculated with the pure cultures, with the result of inducing a pneumonic inflammation which is regarded as being that of veritable pneumonic fever,³⁸ and identical with that caused by inoculating pneumonic sputum and exudation matter. Whether these toxic effects are due to the direct action of the microorganisms or to the noxious and decomposed elements—ptomaines—which they produce is, as yet, not certainly known.³⁹

Other microorganisms are found in the inflamed tissues of pneumonic fever, and some of these have been presumed to be the cause by their discoveries. Thus so long ago as 1877 Klebs⁴⁰ described a microbe—the monas pulmonale—which he considered the essential element in the causation of the disease, and his observations were later confirmed by Eberth⁴¹ and Koch.⁴²

Fränkel⁴³ and Talamon⁴⁴ describe a microbe which is lanceolate, with a capsule which disappears by cultivation, and which requires for its development a temperature somewhat above that of ordinary rooms. It is not certain that the microbes described by Friedländer, Fränkel and Talamon are distinct organisms.

Microorganisms peculiar to other diseases may be found, incidentally, in cases of pneumonic fever.⁴⁵

These facts very naturally lead up to the question of the contagiousness of pneumonic fever. That there is a contagious element in the causation of this disease has been affirmed for a long time, although the fact has not been demonstrated.

If the occurrence of multiple cases amongst people who commingle together can be accepted as proof positive of contagion, it would be easy and quite convenient to answer this question in the affirmative. Under such circumstances, however, it has not yet been proven that the patients have not been exposed to a common cause, as owing to the universal presence of the disease, is most probable. To be sure there are numerous instances on record where, after assiduous attendance upon pneumonic patients, the nurse has been attacked by the same disease.

Blythe⁴⁶ reports two such examples: "A farmer at Bow, North Devon, was affected with acute

³⁶ Op. cit.

³⁷ Op. cit.

³⁸ Whittaker, Jour. Am. Med. Ass'n, May 15, 1886, p. 538; et. al.

³⁹ For further information consult Semmola, Jour. Am. Med. Ass'n, Oct. 8, 1887; Burdon-Sanderson, Brit. Med. Jour., July 14, 1887; London Lancet, 1887, Vol. ii, p. 927; Sternberg, Phila. Med. Times, Vol. xii, p. 386; Shakespeare, Jour. Am. Med. Ass'n, April 30, 1887, p. 478.

⁴⁰ Arch. f. Exptmt. Path., 1877.

⁴¹ Arch. f. k. Med., Bd. xxviii.

⁴² Op. cit. ⁴³ Op. cit. ⁴⁴ Op. cit.

⁴⁵ See Smith, Brit. Med. Jour., July, 1883; Spina and Stricker, Tuberculose, Wien, 1883; Shakespeare, Jour. Am. Med. Ass'n, Apr. 30, 1887, p. 478.

⁴⁶ London Lancet, 1875.

pneumonia, and was nursed during his illness by his niece. His niece became affected by the same disease and carried it to her husband. In another case, an old man, affected with pneumonia, reposed on an affectionate relative's breast during a great part of his fatal illness. The relative was very shortly affected by the same ailment."

Wyman⁴⁷ relates the history of a woman who died from pneumonic fever contracted whilst nursing her 9-year-old son who was ill with the same disease.

Daly⁴⁸ cites the case of a man who nursed his wife during a fatal attack of pneumonic fever, and himself succumbed to the same malady a week later.

Coulthard⁴⁹ reports the case of a large fleshy woman of 73 years, who died from pneumonia fever after four days' illness. Two days after her death her husband, of the same age, was also taken with the same disease and also died in four days. In both the right side was affected.

To these I might add several cases coming under my immediate observation, but will give only one: A gentleman, æt. 69, whom I had previously treated three times for pneumonic fever, died in his fourth attack. His wife, a large fleshy woman, æt. 79, who nursed him, also took the disease and died. They expired within forty minutes of each other—he on the ninth, and she on the fifth day of illness. The husband seemed in a fair way of recovering until he was informed that his wife would probably die, after which his courage and desire for life forsook him and he died forty minutes before her.⁵⁰

In discussing this subject the limit to the meaning to be attached to the term contagion should be clearly understood. For a plausible explanation of the cases above detailed, we must acknowledge that they did not arise from accidental or common causes, but that there were present influences which acted upon the pneumonic poison in such a manner as to render it especially abundant or virulent, or that some local influences caused the patients to be peculiarly susceptible to the morbid agent, or a combination of both. Now if we employ the term contagion in its broad and original sense these cases would all be contagious, but if we limit our meaning of the word, as is now usual, to infection by a materies morbi which has been first passed through and elaborated in the system of some other patient laboring under the same malady, the conclusion

that pneumonic fever is a contagious disease is open to so much doubt that we must await further and more conclusive evidence before it can be accepted.

MEDICAL PROGRESS.

ON THE INFLUENCE OF ANILINE AND OF THE TOLUIDINES ON THE RESPIRATORY CAPACITY OF THE BLOOD, AND ON THE TEMPERATURE.—In an article in *C. R. Soc. de Biologie*, Jan. 5, 1889, p. 10, E. WERTHEIMER and E. MEYER publish the results of experiments which show that chloride of aniline and of toluidine injected into the veins of a dog (30 centigr. per kilo. animal) cause within a few minutes an abundant transformation of hæmoglobin into methæmoglobin (proven spectroscopically). Also in vitro methæmoglobin originates very rapidly in the blood after introducing aniline or toluidine. These substances produce in the dog a moderate decrease of carbonic acid in the blood and considerable decrease of oxygen. The latter is for aniline (7.3 instead of 23.1 vol. per cent.), and for metatoluidine (6.8 instead of 20.4 per cent. o), much more considerable than for paratoluidine (13.5 instead of 23.1 per cent. o), or for orthotoluidine (15.1 instead of 24.2 per cent. o). Also the decrease of temperature effected is much greater for the two former substances (from 39° down to 32° and 30° within from five to six hours) than for para- and orthotoluidine (from 39° down to 37° or 36°).

The authors mention also the experiments of Jaffé and Hilger (*Zeitsch. f. Physiol. Chemie*, 1888), which showed a strong temperature lowering effect in metacetotoluidine, whilst para- and orthoacetotoluidine do not influence the temperature.—*Centralblatt für Physiologie*, No. 3, 1889.

ON THE TREATMENT OF HYDROCELE.—A. E. HIND, F.R.C.S., in the *Lancet* says: The treatment of hydrocele of the testis by injection of solution of perchloride of mercury was discussed, I believe, in the medical journals some years ago, but has not yet received the attention it deserves. In my hands it has always given complete satisfaction, but my cases have only been a limited number. I use a solution three times the strength of liquor hydrag. perchlor., and first draw off the hydrocele fluid and then wash out the cavity with the perchloride solution and draw off any remaining fluid. The last case on which I operated was an old double hydrocele with thick walls. The result was quite satisfactory. The injection does not cause pain, and is not followed by inflammation. In these respects it is superior to iodine. Its action depends on its power of forming an insoluble albuminate of mercury, by which the walls of the cavity are glued together.

⁴⁷ Boston. Med. and Surg. Jour., Dec. 15, 1881, p. 569.

⁴⁸ Op. cit., p. 824.

⁴⁹ Cincinnati Lancet and Clinic, April 14, 1883, p. 353.

⁵⁰ For further information consult Gairdner, London Lancet, 1887, Vol. ii, p. 247; Smith, N. Y. Med. Rec., Feb. 21, 1885, p. 208; Neal, London Med. Rec., Jan. 15, 1882, p. 14; Martin, Trans. Acad. Med. Ireland, Vol. iv, 1886; Chomel, Pneumonie, 1891; Séé, Clin. Lancet and Clinic, Oct. 28, 1882, p. 421; Kühn, Arch. f. klin. Med., Bd. xxi, Heft 4; Rosse, Cruise of the Corwin, Washington, 1883; Sturges, Nat. Hist. of Pneumonia, London, 1876; Ozanam, Hist. Méd. des Mal. Epidém., Paris, 1817, T. iv, p. 76; Hecker, Epidemics of the Middle Ages, London, 1844, p. 20; Bryson, London Lancet, N. Y., 1864, Vol. i, p. 198; Cullen, Prac. Phys., Phila., 1792, Vol. i, p. 182; Juergensen, Ziemssen's Handb., Bd. v, S. 56.

As far as my experience goes, there is no danger of mercurial poisoning. The albuminate is fairly insoluble, and a large amount of mercury is not required. I have tried this treatment with success in a case of infantile hydrocele, after tapping had failed. Iodine causes pain when used, and often much pain afterwards by setting up more inflammation than is required to cure. Iodine also is not always efficacious, and may be followed by abscess. I believe perchloride is sure in its action, and its use does not necessitate rest in bed afterwards. I should like to know if the experience of others who may have used it coincides with mine. Have any ill results been known to follow? Has it ever been known to fail? What is the weakest solution that is effective?

ON THE TREATMENT OF VARIOLA AND OF VARIOLOID WITH COCAINE.—DR. ORY reports in the *Rev. gén. de méd. et de Thér.*, No. 9, that in a case of severe confluent variola improvement ensued and the eruption began to disappear immediately after the patient had taken more than ten pills of 0.002 gr. of cocaine each in one night. After a few days 10 drops of a 5 per cent. solution of cocaine muriate was given four times a day, and the patient was well inside of ten days. In another case a cure of varioloid was effected under the cocaine treatment in five days after the appearance of the pustules. A third case of acute hæmorrhagic varioloid got well without scars under the cocaine treatment within five days. Also in two children (8 drops of a 1 per cent. solution each four times a day) a cure of varioloid ensued under the same therapy in five and six days. As the blisters dried up immediately after the use of cocaine in all cases it could not be determined with certainty whether, in one case or another, the disease was not variola. Cocaine neutralizing the variola virus in the infected organism so rapidly, Ory is of the opinion that it is capable also of preventing its development in the healthy organism, and advises its use as a preventive for those surrounding variola patients.—*Wiener Medicinische Wochenschrift*, No. 22, 1889.

THE DIAGNOSIS OF PANCREATIC DISEASE.—From a careful examination of a case which was under Gerhardt's care at the Berlin Charité von Ackeren endeavors to assign a certain diagnostic importance to the presence of undecomposed carbohydrates in the urine of cases suffering from disease of the pancreas. The patient was a man 49 years of age, admitted suffering from vomiting, constipation and emaciation. To the right of the umbilicus there was palpable a painful irregular tumor which moved to the right when the stomach was full. The emaciation progressed, although the size of the tumor scarcely increased; œdema of the legs and ultimately ascites and hydrothorax

set in, and he died five months after admission. At the necropsy there was found in the pyloric region an ulcerated carcinoma with secondary growths in the retro-peritoneal glands. Two such nodes were present in the pancreas—one in the tail and a larger one in the head of the gland. Two or three weeks before death the urine, which had hitherto been normal, increased in quantity, notwithstanding the œdema, and the specific gravity went up to 1028 and 1030. Fehling's solution showed reduction only some time after heating, while the nitrate of bismuth solution turned black after some minutes' boiling. Polarized light was rotated to the right, and the fermentation test gave a positive result. The application of other tests showed these reactions as due to the presence of maltose and a closely allied carbohydrate. Indican was present in abundance, and there was no biliary pigment. The motions, although repeatedly examined, never showed any fat, but, on the other hand, there were numerous striped muscular fibres. As these symptoms were added to those of cancer of the stomach only two or three weeks before death, they probably coincided with the occurrence of secondary growths in the pancreas. The presence of striped muscular fibres in the fæces was of great importance, as they have been found in nearly all those cases, although here, as shown by the constipation which existed, they could not be looked upon as due to a rapid passage through the intestine. Both this symptom and the absence of indican from the urine have been attributed to the failure of trypsin. In a case recorded by Gerhardt, where the enlarged head of the pancreas had led to intestinal obstruction, indican was absent, and that observer sought to invest it with some diagnostic significance; but it may be explained by albuminous matter not entering the intestine, as it has been shown that indican disappears entirely by the third day in cases of inanition. In this case it was present in abundance. With regard to the presence of fat in the fæces, F. Müller has shown that when this occurs the case is always complicated by other conditions, especially jaundice. Here no biliary pigment appeared in the urine, nor was there any fat in the motions. According to v. Mering, the pancreas possesses the most powerful diastatic ferment; and it is probable that it is the pancreatic secretion alone which converts the maltose, derived from the carbohydrates of the food, into grape sugar. As carbohydrates do not appear in the motions, the only symptom pointing to disturbance of this process is the excretion of sugar in the urine, and in this connection it is interesting to recall the fact, long ago observed by Frerichs, that in diabetes mellitus the pancreas is frequently found much atrophied. (*Berlin. klin. Wochenschrift*, No. 14, 1889.)—*The Practitioner*, June, 1889.

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SATURDAY, AUGUST 3, 1889.

AMERICAN GYNECOLOGY.

The Provincial Medical Journal of England, in an editorial relating to the British Gynecological Society, pays a very high and well deserved compliment to the Society in question, and incidentally to American gynecology and dentistry. "We write with regret," says the editor, "that the Americans are ahead of us in dentistry and in gynecology. The reason is that gynecology was separated from obstetrics, and its study put on a proper basis. Excellent handbooks, as those of Thompson, Mundé, Goodell, have been published and are to be found in every practitioner's library in the States. The Americans took up the study with all the energy of a young people, and we are simply following in their wake, and attempting to interest general practitioners in a branch of practice which is the most important one to them. There is always a little difficulty in launching out a new society. Even in the practice of medicine there are jealousies, but the British Gynecological Society had even less difficulty than was anticipated. It evidently met a want; hence its hundreds of members; hence the success of its meetings and its transactions. Opposition and competition are excellent things; they stimulate to action; and the best thing for the British Gynecological Society would be personal antagonism, as we feel sure it would stir up those who are interested in it to make it a still greater success."

The Provincial Medical Journal evidently has considerable fighting blood in its veins; but if inclined to be aggressive it is certainly just and candid, both in regard to the British Gynecologi-

cal Society and to American gynecology and dentistry.

We Americans are certainly very much interested in the British Gynecological Society, for it has ever shown since its foundation an amount of enterprise that is really quite American! An outgrowth of the Obstetrical Society of London, it had its beginning in 1885, since when the accessions to its membership have been extremely rapid, while the character of its work has been the very best. By the Obstetrical Society it was regarded, at first, as simply a little rabble of fanatics blindly running after their leader, Tait. Three years ago an American in London was informed, by one of the most prominent obstetricians of England, that he could not possibly promote his interests either in England or in America by joining such a society as this one. To-day the British Gynecological Society has a large number of members in this country who take a very cordial interest in the work being done by the Society, many of whose home members, such as Tait, Bantock and Barnes, are well known by us not only from their published works, but from visits made us. We are little concerned in the rivalry between Sir Spencer Wells and Mr. Tait. Even if it be true that Tait's eminence made easy the establishment of a new society in which Americans at once took a great interest, we find no evidence of weak idolatry in the members. The Obstetrical Society decries its rival "because its members remove too many ovaries." After all, each one will have to decide such matters for himself.

We admire Wells and we admire Tait, and we do not believe that the former is the Obstetrical Society, or the latter the Gynecological Society. Each has had a rich experience which we who are interested in operative gynecology will do well to carefully study. Meanwhile we find that the British Gynecological Society is doing more to make its work known abroad than is any other special society in England.

HEALTH BOARDS AND PHTHISIS.

The circular recently issued by the Health Department of the City of New York, in relation to the prevention of tubercular consumption, is undoubtedly founded upon the most advanced laboratory investigations of the life history of the bacillus which is supposed, in the present state of

our knowledge, to constitute the "contagium vivum" of this disease: but it is hardly characterized by a sufficient degree of practical applicability to warrant the hope of an immediate abolition of infection. Granting the postulate that the "living germs" in the sputa of consumptives, expectorated "on the street, floors, carpets, handkerchiefs, etc.," may, after drying, "float in the air as dust," and admitting the germicidal efficacy, even in a highly albuminous medium, of mercuric chloride, it is still difficult to understand how the prophylactic directions of the circular are to be generally carried out. In the population of New York there are probably more than twenty thousand consumptive people daily frequenting public places, and expectorating their "enormous numbers" of bacilli on the sidewalks, in cars and other conveyances, in lecture rooms, theatres, hotels, and even churches. The parks naturally possess a peculiar attraction for them, and an excursion-boat commonly bears more than its statistically normal share of them. The circular wisely ordains that such persons should not be permitted to spit on anything which cannot be immediately disinfected, and adds: "The spittle of persons suspected to have consumption should be caught in earthen or glass dishes containing the following solution: corrosive sublimate 1 part, water 1,000 parts." But how is this to be effected? Shall we have in the future City of Health an army of emissaries from the Department closely watching the footsteps of each "suspicious wayfarer, and thrusting a regulation glass dish under his nose whenever he coughs? Or will there be a special bureau of auscultation and percussion to verify the suspicious cases and isolate them in an aquarium of bichloride solution?

Where the suspicious stage is past, and the certainly consumptive patient is confined to the house, it is prescribed that his room should have "as little furniture as possible," and that "the use of carpets, rugs, etc., ought always to be avoided." The abstract advisability of depriving a mother or wife whose days are numbered, and who is to be scientifically considered only as a focus of infection, of all accustomed comforts may commend itself forcibly to the strictly medical mind, but the strangely sentimental prejudices of the public at large will, we fear, prevent the adoption of this rule by perhaps the

majority of those who can afford the prescribed luxuries.

The recommendation to "catch the bowel discharges of consumptive patients" in vessels containing the same solution advised for the sputa is not likely to be observed among the poorer and more ignorant classes, whose overcrowded tenements enhance the proclivity to infection; and in view of the common carelessness of such folk, it may be questioned if the domiciliary storage of corrosive sublimate may not present some counteracting disadvantages, and whether it be better for their unkempt offspring to be poisoned in infancy or to die of phthisis at a more advanced age.

Other rules are given, touching the nursing of children by mothers suspected of consumption, the washing of a patient's clothing, the marriage of "suspected" persons, and divers more or less relevant minutiae of antisepsis, the theoretical propriety of which must be apparent to the meanest capacity, but the enforcement of which is problematical. For, be it remembered, this circular is not addressed to physicians, who alone are competent to appreciate the importance of its suggestions, and who may usually be trusted to take intelligent precautions as far as circumstances will permit: but is spread broadcast among the populace, who are neither educated to accept scientific conclusions nor likely to recognize the existence of tuberculosis until it has reached its final stage.

WITH RIGHT INTENT.

With a politician at the head of the Health Department of New York City, it is not surprising that such a bulletin should emanate from such a source. That in its application it is impracticable, we have already shown. Indeed it is easy to assume the rôle of objective and even of destructive criticism when difficult problems are involved, and to demonstrate the errors involved, but it is another thing to point out with unerring certainty the better plans and the methods to success.

While criticising its methods, THE JOURNAL desires to emphasize its approval of the purpose of this municipal legislation. Imperfect as its work may be it is nevertheless expressive of *the right intent*.

A great fact underlies this action which is of great importance to the citizen and to the State.

It involves this fact, that municipalities are charged with the surveillance of the health of its citizens. If so, it follows that when by any means the general health is imperilled, legislation should come to its rescue, and that as life is paramount to property, by so much the more should commercial interests and personal convenience yield to such restrictions as may be needful for life-protection. In emergencies absolute quarantine is the logical sequence of such legislation.

This brings us to the purpose of this article. The public mind is becoming more and more enlightened with reference to the nature of diseases. It is more and more apparent that while many affections may not be subject to control, on the other hand there is a vast amount of preventable disease, and the conclusion is legitimate that when prevention is possible, prevalence is evidence of criminal neglect. Naturally the public turns to the medical profession for the solution of those questions in which human health is involved. If we assume the responsibilities incident to the criticism of imperfect methods, we should be prepared to indicate those that are better. The province of the medical profession at the present hour is not only to deal with those that are sick, but with those that are well. And by so much more as a man is valuable to the State in health than in disease by so much the State is interested in preventive medicine. It has need, then, to be informed as to which are, and which are not preventable diseases. It needs to be correctly informed as to what may be done legitimately, and also of the difficulties which lie in the way of controlling contagious diseases.

The answers to these questions involve a vast amount of painstaking investigation and perhaps the work of years. But only by such investigation and by such patient observations can these answers be reached. Only upon knowledge thus obtained can intelligent and satisfactory legislation be based. If in their work medical men shall come to correct conclusions the honors and the benefits which shall inure to such labors will be beyond measure. If, on the other hand, premature conclusions shall be involved with serious errors, in practical application these errors will surely become apparent, and in proportion to their gravity will be the severity of criticism which the medical profession must endure.

The question involved is this: Can the profes-

sion so wisely guide an intelligent public as to assure an abiding loyalty, or shall it fail of its true mission, and provoke infidelity to the fundamental facts of sanitary science? If we are destructive in criticism, let us be also constructive of the best methods of promoting the public health, and let the necessities for correct conclusions stimulate men that are equal to the demand to at once and continuously put forth the needed effort.

THE RESIGNATION OF DR. DE WOLF.

Chicago has suffered a loss by the resignation of the Commissioner of the Health Department, Dr. Oscar C. De Wolf, who, through his official services as Health Officer for the past thirteen years, has contributed so much to the well-being of its citizens, and, at the same time, has gained for himself a National reputation as a man able to successfully grapple with all the difficulties besetting such a position, political and sanitary. *The Sanitary News*, editorially referring to his resignation, says: "He has practically created the Health Department of this city. . . . He has demonstrated fully his ability to preside in this capacity by his efficient ministration in a field of so great magnitude, confronting him with so many and so great difficulties. Whatever his future labors may be, his gain will not be so great as the city's loss, but in whatever field his efforts may be directed, we trust the same measure of success may attend him. His successor, Dr. Wickersham, will find a well organized department, and we hope his labors will prove efficient, and receive the hearty support of all the citizens."

Dr. De Wolf is a member of the American Medical Association, having joined at the Chicago meeting in 1886.

EDITORIAL NOTES.

HOME.

THE AMERICAN DENTAL ASSOCIATION meets at Saratoga Springs, commencing August 6th. The prospects are said to be good for a large convention.

THE CINCINNATI FREE HOSPITAL FOR WOMEN has been organized by the election of the following officers: *Board of Trustees*, Thos. H. Egan, President; Dr. H. Longstreet Hall, Secretary;

W. H. Curnayhan, Esq., Treasurer; Dr. C. L. Armstrong, H. M. Rulison, Rev. M.C. Lockwood. *Staff*, Drs. Charles A. L. Reed, Rufus B. Hall, Surgeons; Charles E. Caldwell, Pathologist; J. A. Johnston and A. I. Carson, Assistant Surgeons. A large and influential Board of Lady Managers has also been elected.

DR. JAMES F. HARTIGAN, of Washington, an active and esteemed member of the Medical Society of the District of Columbia and the American Medical Association has been appointed to an Austrian consulate.

THE ACT REQUIRING A LICENSE TO PRACTICE MEDICINE CONSTRUED AND HELD CONSTITUTIONAL.—The opinion of the Supreme Court of this State, by Shope, J., holding that in this case the validity of the statute was involved, and the appeal was properly taken to the Supreme Court, that this proceeding is not in its nature criminal, being punishable by fine, and does not come within the spirit of the law forbidding appeals or writs of error by the people, or the twice putting in jeopardy. It is simply a civil proceeding—an action of debt to recover a penalty. That the subject of the Act is sufficiently set forth in its title; that the defendant travelling from place to place with a band of music, and collecting the people together, and vending remedies and nostrums for the cure of disease, etc., without a license, was a violation of the section under consideration of the Medical Practice Act. Although this is a short opinion, there are several important questions passed upon by the court of last resort. In construing the law relating to the practice in our police courts, this opinion will well repay a careful examination and study. This opinion is published in full in the *Chicago Legal News* of July 13.

FACULTY CHANGES.—The Faculty of the College of Physicians and Surgeons of Baltimore, held a meeting recently to fill the vacancies created by the deaths of Professors John S. Lynch and Oscar J. Coskery, and the retirement of Professor A. B. Arnold, who has removed to San Francisco. Prof. Thos. S. Latimer was transferred to the chair of principles and practice of medicine and clinical medicine; Prof. Chas. F. Bevan to the chair of principles and practice of surgery and clinical surgery; Prof. J. W. Chambers to the

chair of operative and clinical surgery, and Prof. George H. Rohé to the chair of obstetrics and hygiene. Prof. Thos. Opie will continue as professor of diseases of women and dean of the faculty. To fill vacancies created by these transfers new professors were elected as follows: Prof. Henry Sewall, of the University of Michigan, to the professorship of physiology; Dr. George J. Preston to the professorship of anatomy, with the diseases of the nervous system as a clinical branch of instruction. Dr. N. G. Keirle was elected as lecturer on legal medicine, in addition to his demonstrations in pathology; Dr. George Thomas as lecturer on diseases of the throat and chest; Dr. G. A. Liebig, Jr., of Johns Hopkins University, lecturer on medical electricity, and Dr. J. H. Branham, demonstrator of anatomy. Drs. L. F. Ankrum, Frank C. Bressler and F. G. Moyer were appointed assistant demonstrators, and Dr. R. G. Davis, prosecutor of anatomy. As an evidence of esteem on the part of his colleagues, Prof. Arnold was elected emeritus professor of clinical medicine on his retirement.

MILWAUKEE'S GARBAGE CONSUMER.—Sanitarians and health officers have endeavored from time to time to solve the problem of how to dispose of the accumulation of garbage in the large cities. Milwaukee has adopted a consumer known as the Merz process, and which is described by a contemporary as follows: About thirty-five tons of garbage—"good, clean garbage," free from ashes—is delivered at the works every day at this time of year. The wagons drive up an incline and unload upon the second floor, where it is immediately thrown into the dryers. The dryers are tanks about fourteen feet long and five feet in diameter, having a double cylinder—a small one inside of a larger. Between the shells, or the cylinders, is a steam space of two inches, which has a boiler pressure of eighty-five pounds on constantly. The cylinders have cast-iron heads, and a large hollow shaft running through the centre of the inner cylinder. This is also filled with steam, and revolves by means of gear wheels, keeping the contents in circulation until thoroughly dried.

The moisture is drawn off by means of a large exhaust fan through a twelve-inch pipe and forced into a spray condenser. When the material is thoroughly dried it is discharged from the dryer

into a conveyer, which deposits it into square tanks called extractors. After being sealed and made air-tight benzine is introduced into the extractors and the grease is dissolved with a solution of hot benzine. After the grease has been dissolved and washed out, the material is sold for fertilizer.

The benzine is distilled out of the grease over again and used. The grease is sold to soap and candle makers.

FOREIGN.

SMALL-POX AND TUBERCULOSIS.—At the late Congress on Tuberculosis it was stated that persons who have had small-pox are peculiarly liable to tuberculosis. M. Landouzy deprecates the employment of persons pitted with small-pox around the tuberculous wards of infirmaries and hospitals.

WANTED, AN EDITOR.—*The British Medical Journal* says: " 'I want a hero—an uncommon want,' sang the poet. A still more uncommon want, one would have thought, would have been that of an editor for a medical journal. Yet from this cause the *Breslauer ärztliche Zeitschrift* came to an untimely end on June 29. It has been impossible to find 'a commanding personality' to supply the place of the late Professor Gscheidlen, who founded the journal and gave it the prominent place it held in German medical literature during the ten years of its existence. Those interested in prolonging the life of the defunct periodical should have sought for what they wanted in this country, where would-be medical editors grow on every bush."

Why not have crossed the Atlantic, where medical editors are more plentiful than the "would be" ones in England?

IN ENGLAND a London health inspector reports a number of cases of diphtheria caused by cats going from house to house and thus carrying the virus. Queen's Hospital, Birmingham, is the recipient of \$5,000 by the will of Mr. George Dawes, of Smethwick. Dr. Burroughs lauds nitro-glycerine as a quick stimulant in place of alcohol, and gives as the ordinary dose 1 drop of 1 per cent. At a recent meeting of the Royal Botanical Society Mr. R. G. Lecky described, in a very interesting paper, a new edible seaweed found on the coast of Ireland, and which, according to the author, is a nutritious, wholesome, and cheap food, so excellent in taste that it may be called a luxury.

IN FRANCE the students in Paris have decided to wear distinctive badges to denote the courses which they are pursuing. Dr. Gautier, while pulverizing dry discharges for the purpose of making experiments as to infection by tuberculous germs, became himself infected and died. Dr. Lancereaux, physician to the Hôpital de la Pitié, objects to the use of movable stoves, which are apt to cause carbonic acid poisoning. The Société Médicale des Hôpitaux have recognized the necessity of isolating cases of whooping cough, which the members consider far more contagious than either scarlatina or measles, and have approved the organization of small wards, containing six or eight beds, instead of the large wards which are now used.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Fortieth Annual Meeting. Report of Sections.

Section on Laryngology and Otology.

FIRST DAY, TUESDAY, JUNE 25.

DR. W. H. DALY, of Pittsburg, Pa., delivered the Chairman's address, entitled *Marking an Era in Laryngology*. The author referred to this, the first meeting of the Association of Laryngology and Otology, as an exclusive and autonomous Section, disassociated from the Section of Ophthalmology. The laryngologists and otologists have long agreed, that to be an able practitioner in either speciality one must be well informed and competent in both of these special branches. While there is little call for the special skill of the laryngologist in treatment of the eye, we are convinced that there was no mistake in expressing the opinion eight years ago at the International Medical Congress that the laryngologist of the future must be more of a rhinologist, and the rhinologist more the surgeon than the physician. As by far the largest number of inflammatory diseases of the middle ear cannot be successfully attacked without the skill of the laryngologist and rhinologist, since the largest number of these cases begin in the naso-pharynx and are only arrested by the proper skill in treating these parts. The new relation is close, rational and common sense.

DR. JOHN MCKENZIE, of Baltimore, reported *A Case of Lymphoid Tumor Originating in the Floor of the Pyriform Sinus*, and threatening suffocation when the patient was in the recumbent

position. A clergyman, æt. 42, had never had any throat trouble, and was otherwise in perfect health. There was no assignable cause for the growth. On microscopic examination it was found to consist entirely of the lymphoid tissue of the pharynx recently described by Waldeyer and his pupils. The tumor was removed by first exciting gagging, so as to throw it as far as possible up towards the back of the tongue. It was then caught with a pair of laryngeal forceps, and with these as a guide, the large écraseur was passed over the tumor and it was rapidly cut through. The reporter remarked that growths of various kinds are occasionally found on the pillars of the fauces, glosso-epiglottic fossa, and upper pharynx; but tumors originating in the pyriform sinus are exceedingly rare, and that the growth described is unique.

DR. SOLIS-COHEN remarked that it was rather curious that this unique growth originated in the position from which some few cases of lipoma had taken origin.

DR. JONATHAN WRIGHT, of Brooklyn, N. Y., read a paper on *Nasal Bacteria in Health*. The bacterial contents of the normal nasal chambers in ten cases were examined by culture methods and by cover-glass preparations, with the result of finding the staphylococcus pyogenes in six of the ten, and only air forms in others. The function of the nose as a bacterial filter of air passing through it, was spoken of, and photographs shown of one experiment which showed mold growths on gelatin plates. As far as the limited experiments of the author of the paper went, about three-fourths or four-fifths of the total number of the bacteria in the air find a lodging place in the nose before the tidal air reaches the lower pharynx. The paper was preliminary to more extended bacterial investigations into nasal diseases.

DR. JOHN MCKENZIE thought the solution of many points in nasal pathology by bacterial investigations would not be an event of the immediate future. The problem is an intricate one, especially in view of the constantly changing environment of the individual. The dependence of ozena on micrococci has not been determined.

DR. W. FREUDENTHAL, of New York, read a paper on *The Connection Between Chronic Diseases of the Upper Air Passages and Hernia*. In continuation of former observations the author found that in accordance with the frequency of nasal disease, hernia are found: In the United States in 50 out of every 1,000 conscripts; in France, in 22.89; in Italy, in 16.61; in Austro-Hungary, in 14.09; and in Germany in even less than 14. Furthermore, the author of the paper proves the correctness of his theory, against Dr. Schafinger who had affirmed that facts do not sustain it. In women hernie are rarer than in men, on account of the weaker stress used in act

of hawking, clearing the throat and the like.

DR. J. H. BRYAN, of Washington, D. C., read a paper, entitled *Diagnosis and Treatment of Abscess of the Antrum of Highmore*. The author, after describing the antrum and its relations, remarked that until recent years abscess of the antrum was thought to be very rare, but that we now know that it occurs quite frequently. Of surgical affections, suppurative inflammation plays the most important part. It generally occurs after the second dentition. Among causes are traumatism, exanthemate, syphilis, extension from the nose of inflammation of its lining membrane, extension from inflammation caused by carious teeth. Authors differ as to the relative frequency of these causes. The author regards sero-mucus accumulation or hydropsantri as the result of nasal disease, but muco-purulent as arising from carious teeth. The close relation of roots of the second molar teeth with the antrum affords ready communication of disease from them. Symptoms vary in different cases. Sometimes there is distention of the walls of the superior maxilla and swelling of the cheek, etc., tenderness on pressure, a springing deviation to the finger on pressure over the distended cavity. A narrowing of the field of vision by pressure on the floor of the orbit, is regarded by Ziem as diagnostic in favor of disease of the ethmoid cells. In some cases there is a discharge of fetid pus from the nose. Pus from the nose may be due to foreign bodies, disease of bone, secretion of pus from the antrum or from the frontal sinus. Otherwise suppurative inflammation of the nose is extremely rare. The author then pointed out the indication which should guide in distinguishing among these possible sources a given case.

A great deal has been written recently as to treatment. The author noted the tendency to return, after a century, to Hunter's method of opening through the nose, instead of through the mouth. Cooper's method through the alveolar process has been in greatest favor. Extraction of teeth may be necessary, and if sound ones this is an objection to the method, and this is the case with which foreign substance and bacteria from the mouth may penetrate through the opening. Its advantages are easy drainage and washing out with antiseptics. Bertrand opened through the hard palate. Hartman has revived Hunter's method. This does not afford easy means for evacuating thick pus and for washing out, etc. Stoerk claims several cures by this method. The author thinks its disadvantages will prevent its general acceptance.

Miculicz advises opening where the lateral wall of the nose is thin, and uses a special double cutting knife, attached to the handle at blunt angle. Local anæsthesia by cocaine is sufficient. By this opening the floor of the cavity is well drained and easily syringed out, and there is little danger of

foreign bodies gaining entrance as when the opening is through the mouth. Local treatment is important—washing out with mild disinfectants. The best for fetor is permanganate of potash.

Some cases will require where the inflammation is obstinate, the author recommends, the use of peroxide of hydrogen; or better, glycozone—a mixture of glycerine and peroxide of hydrogen. It destroys the septic material and stimulates at once.

The author gave the history of several cases treated by himself.

Discussed by Drs. Lippincott, E. Fletcher Ingals, Daly and Boyan.

DR. JOHN O. ROE, of Rochester, N. Y., read a paper on *Glandular Hypertrophy at the Base of the Tongue*. The author remarked that in the near past this condition, which is not rare, has been overlooked for the most part. Collections of mucus and lymphoid glands aggregated in various masses in the naso-pharynx, fauces, are of the same general nature and have received the name "tonsil." The lingual tonsil is so situated as to be easily irritated by solids and fluids of different temperature and character. They are surrounded and supplied with a system of blood-vessels. By these exposures to irritation they are especially exposed and become congested, enlarged and varicose. This condition may also be due to general plethora and may indicate portal congestion, mitral disorders, or even cerebral tumors. The diagnosis is easily made by inspection on drawing the tongue forwards.

The treatment involves two measures: First, to remove the growth. This is done with a curved knife, by slicing off down to the normal level, or with a pair of scissors curved on the flat. This operation is attended with very little bleeding, the tongue heals quickly and is attended with very little soreness. The galvanic cautery may be used, either the knife cutting through the base or by transfixing with a needle. The other measure of treatment is to destroy the varicose vessels. This is best accomplished with the galvano-cautery by use of a fine point applied along the course of the vessels. Caustic is used by some, nitric, chromic acid and Vienna paste—but when a great amount of hypertrophy is present the operative measures are best.

Discussed by Drs. Solis-Cohen and Green V. Woolen.

SECOND DAY, JUNE 26.

The following were elected officers for the ensuing year: Dr. John O. Roe, of Rochester, N. Y., President; Dr. Frank H. Potter, of Buffalo, N. Y., Secretary.

It was voted, on motion, that the Secretary select an Associate Secretary, familiar with otological knowledge, and living at the place of meeting of the Association next year.

On motion of Dr. Solis-Cohen, it was voted

that hereafter one meeting of the Section be devoted to subjects of otological interest.

DR. D. BRYSON DELAVAN, of New York, read a paper entitled, *Adenoid Hypertrophy at the Vault of the Pharynx; its Pathology and Treatment*. The writer stated that there were two principal varieties of this disease. In one the growth was soft, friable and rich in lymphoid elements, in the other there was an excess of fibrous tissue. The first was removable with ease and with little pain, the latter was exceedingly tough and removal caused much pain. The methods of operation were alluded to and it was insisted that in the more severe cases, even in young adults, the use of anæsthesia was of the greatest importance, and that the removal should be completed, if possible, at one operation. The writer also insisted upon the great importance of the proper after-care of patients thus operated upon, and recommended that they be kept in bed until the general effects of the operation had disappeared, that they be put upon a course of tonic treatment, that the mouth-breathing habit be corrected, by special attention thereto, that deformity of the chest, if present, be remedied by proper physical exercises, and, finally, that errors of pronunciation be eradicated. The paper was illustrated by numerous instruments and by several fine colored drawings.

DR. JOSEPH A. WHITE, of Richmond, Va., then read a paper entitled, *The So-called Third Tonsil*.

The author's experience and observation led him to believe that glandular hypertrophy in the post-nasal space, however produced and however little, is an active agent in keeping up a catarrhal condition of the region and causing its extension to neighboring cavities, especially the ear. To get rid of naso-pharyngeal catarrh it was necessary to destroy hypertrophied tissue as a means to this end, and to the same end chronic follicular tonsilitis, so-called, must often be removed. We do not know the exact function of these glandular structures, but we do know that their removal is followed by no disaster. Perhaps the third tonsil plays a greater part with production of secondary disease than the faucial tonsils. This is easily understood when their relations to the blocking up of the air-passages and interference with the proper ventilation of the Eustachian tube is considered. Marked impairment of hearing is always present in these cases of soft lymphoid tissue. Besides the mulberry-like growths there may be round or conical nodules, or several knob-like outgrowths, or flat, cushion-like nares, etc. Sometimes these are soft and easily removed. Sometimes they are dense and hard. The Eustachian tubes are especially injured by tissues of the latter character, the opening being seriously dammed by their pressure. Such are more difficult to cure. Statistics are unreliable, because slight deafness

is overlooked in these cases. Careful tests will usually discover more or less deafness where these growths exist. Out of 565 cases during the past eighteen months, treated for naso-pharyngeal affections 197 had disease of the middle-ear. Of the whole number, 134 had hypertrophy of the third tonsil, of whom 62 had impaired hearing—20 per cent. Perhaps the larger proportion than reported by other observers is due to peculiar climatic influence. An interesting point in these cases is the large number of voice troubles found among them, and laryngitis, resulting from these hypertrophies in the vault of the pharynx. The vaulted space should be perfectly preserved in shape if resonance and timbre of the voice is to be preserved, as is well known from our experience with singers and others who habitually use the voice. Naso-pharyngeal troubles are always aggravated by these glandular enlargements, causing increase of secretions, etc., and this prevents the benefit of other local treatment, unless the hypertrophies are first removed. One of the serious results of the neglect to do this is anterior turbinated hypertrophy. Another is the occasional paralysis of the alæ of the nose, causing serious impediment to breathing. It matters little how the growths are removed provided it be thoroughly done. Large masses are best removed with the galvano-cautery, snare, or cutting forceps. So also of the denser growths mentioned above. The use of the forceps is quite painful, even when cocaine is used. Smaller hypertrophies and smooth masses are best removed by galvano-cautery points or moxa-electrodes. The author had found his palate-retractor of great help in such work.

The paper was followed by a report of cures and exhibition of specimens.

DR. LAWRENCE TURNBULL read a paper *On the Value of Antiseptic Treatment, and Protection for the Membrana Tympani, in Perforations the Result of Otorrhœa*. He stated that it was not necessary at this time to advocate or dwell at length upon the great value, nay, absolute importance, of antiseptic surgery. Its latest triumphs and most brilliant results have been shown in brain surgery. It is not only possible to reach and drain abscesses in the tempo-sphenoidal lobe of the cerebrum, but it is considered possible to save life by opening into the cerebellar fossæ and remove pus from the neighborhood of the lateral sinus. The antiseptic treatment of chronic purulent disease of the middle ear was a natural sequence, and was soon followed by the use of boracic acid in powder and solution, and still later by the superior antiseptic agent, bi-chloride of mercury, alone or combined in solution; then by the use of antiseptic wool, and gauze, with the protecting agency of oiled silk, which protectors act as artificial membranes and prevent the entrance of diseased germs from the air.

The author of the paper then dwelt upon the

various causes preventing the cure of chronic discharge from the ear. Also the treatment of perforations of the membrana tympani by means of grafts of skin, lining membrane of the chicken egg, skin of the frog's foot, and nictitating membrane of the frog's foot.

The paper concluded by reporting a few cases in illustration of the subject.

DR. C. W. RICHARDSON, of Washington, D. C., then read a paper on *The Possible Danger of Injury to the Middle Ear Cavity by the Use of Nasal Atomizers, Illustrated by Three Cases*.

The author expressed the expectation of exciting criticism and skepticism. The object of the paper was to call attention especially to danger to the middle ear as a result of atomization of the nasal cavities by such instruments as Davidson's and Snowdon's atomizing tubes from direct pressure. The first case, that of a lady, being treated for rhinitis atrophica. During the use of the spray with Dobell's solution, pain was experienced in the ear. This was followed in a few hours by serious ear trouble, pain radiating over the side of the head and along the Eustachian tube. Effusion set in and was attended with deafness, roaring in the ear, etc., all the symptoms of acute otitis media.

The second case occurred in a gentleman who had great hoarseness and naso-pharyngitis. While using the spray the patient remarked, "Doctor, that certainly entered my ear." The spray was stopped at once. Soon after great pain set in and became almost unendurable. The pain was of a throbbing character, intensified by coughing, clearing the throat and swallowing. There was tenderness over between the mastoid and the jaw, hearing reduced R. $\frac{2}{5}$, L. $\frac{1}{5}$. Cerumen was found in R. E. It was removed, and hearing then was R. $\frac{3}{5}$, L. $\frac{2}{5}$. The membrane of right ear then showed evidences of morbid inflammation. It was a case of acute middle ear inflammation, well marked.

In case third, Dr. L. consulted the author in February, 1889, for severe pain in right ear, and was constantly annoyed by obstruction to free nasal respiration. The spray was tannic acid gr. j to 3j. This was followed, like the other cases, with acute symptoms of middle ear inflammation. Cases published by Dr. Ring in the *Medical Record* of August 11, 1888, were referred to by the author.

The author gave his explanation of the manner in which the spraying under pressure excites middle ear trouble. He declared it a common experience with himself, as he had no doubt it was with other laryngologists, that under the spray patients often express the sensation that fluid has entered the ear. The intention of the paper was not to decry the use of the atomizer, but simply to call attention to possible dangers. The author also called attention to the fact noticed by him that the use of the spray may be the direct agent in producing otitis media hypertrophica.

DR. MACKENZIE believed that fluid may enter the ear by any method of cleansing the nose, and that the danger does not pertain specially to the spray. He narrated a case of double otitis media resulting from the use of intranasal spraying. His remarks did not apply to the nasal douche.

Discussed by Drs. Wright and H. H. Curtis.

DR. J. L. THOMPSON, of Indianapolis, Ind., read a paper entitled: *Report of Cases of Dangerous Middle Ear and Mastoid Inflammation which followed Treatment of the Naso-Pharynx*, in which he gave the history of, 1, case of suppurative otitis media excited by the use of finely powdered acetate of lead in epistaxis; 2, case of otitis media with extension to mastoid following application of strong solution of nitrate of silver to the nares; 3, otitis media, following application of caustics to the nasal mucous membrane; 4, case of suppurative otitis media of five years' duration following applications to the nares; 5, case of suppurative otitis media with total loss of right drum head and greatly impaired hearing following surgical treatment of naso-pharynx. The history of twenty cases of similar nature were reported by the author at considerable length, of similar origin and of the same general character as those above cited. The author remarked in conclusion: 1, that from his experience he was convinced that inflammations from said causes are of very frequent occurrence; 2, operations should never be made nor caustics applied to the nose during acute catarrhal inflammation of the parts; 3, patients should be instructed to report immediately on the first twinge of pain in the ear after an application to the nose; 4, the operator should be prepared to leech, puncture the drum, etc., promptly as soon as indication arise, and the operation for puncturing the mastoid, when extension to it has taken place of the inflammation, should by no means cause hesitation.

Discussed by Drs. H. H. Curtis, Ingals, and Woolen.

DR. J. G. CARPENTER, of Stanford, Ky., then read a paper entitled: *Internal Ear Deafness, Illustrated*. Internal ear deafness, in many of the cases, is due to nasal disease, and that by causing the latter the former is relieved, and that nasal disease should be cured before structural lesions have taken place in the inner ear. Report two cases in which in addition to chronic naso-pharyngeal catarrh for the predisposing and acute catarrh for the exciting cause, syphilis was an important factor in one and quinine in the other. The air in the Eustachian tubes and middle ears normally being in a rarefied state, that warm rarefied air should be used for inflation of the Eustachian tubes in preference to cold air, the acute and subacute congestion and inflammation should subside, the chronic congestion of the upper air-passages reduced to a minimum before inflation of

the middle ears. In the cases reported there had been also aural catarrh and tympanic deafness before the labyrinthian deafness supervened.

DR. J. A. LIPPINCOTT, of Pittsburgh, then read a paper entitled: *A Case of Sclerosing Mastoiditis, occurring subsequently to Primary Purulent Mastoiditis Interna. Opening of Mastoid. Exposure of Dura Mater. Recovery*.

The mastoid process had been opened in Sept., 1885, in a distant city, and an abscess found, which was carefully cleansed. The wound soon healed, and the severe pain was relieved for six months, when it recurred, gradually becoming more severe until July, 1886, when the case came under Dr. Lippincott's observation. All sorts of treatment, local and constitutional, failing to afford relief, Dr. L. made a pretty considerable opening in the mastoid, in October, which unfortunately accomplished nothing. The condition of the patient now became more and more deplorable. Notwithstanding the administration of large quantities of morphia, chloral, etc., pain was never absent. The patient became emaciated and haggard. Convulsions set in and occurred frequently. Seven months after the last operation, viz., in May, 1887, at the urgent solicitation of the young lady, a second operation was made. In the effort to make the opening this time sufficiently large and deep to give relief, the dura was exposed in the anterior part of the bottom of the wound to the extent of $\frac{1}{4}$ inch. On recovery from the anæsthesia the pain was found to have disappeared. Convalescence was rapid and uneventful, and the young lady resumed her work two months after the operation. A final examination made a few days ago reveals the same happy exemption from pain. It should be added that the chief symptom in this case was the extreme pain, there being no inflammatory appearances about the ear or the mastoid region.

DR. FRED L. CROSSFIELD, of Hartford, Conn., read a *Report of Two Cases, illustrating Epilepsy Caused by Intra-Nasal Disease*.

The first case came to my notice in 1886, and had all the appearances of some severe lesion of the lung. Emaciation, hacking cough, more severe at night, headache, night sweats, and poor appetite. Had epileptic convulsions past six years, twice a month or oftener. In connection with this condition he had marked nasal hypertrophy, both sides, with deviation of septum, left side, and exostosis in form of sharp angle, which pressed against the hypertrophied turbinated body. Marked adenoid growth of naso-pharynx, slight changes in the larynx. Epilepsy entirely disappeared when pathological condition removed. Patient now perfectly well. Second case much like the first, only slight enlargement of pharyngeal tonsil. The epileptic seizures much more frequent. This case likewise fully recovered on removal of the cause.

DR. CHARLES H. KNIGHT, of New York, read a paper on *Menthol in Laryngeal Phthisis*. Twenty cases, most of them of a severe type, treated with menthol applications, furnish the author ground for believing that this is a valuable agent in tubercular laryngitis. The drug was dissolved in fluid albolene, in the proportion of 1 drachm or $1\frac{1}{2}$ drachm to the ounce, and applied by means of a laryngeal syringe, or in the form of spray, or with a nebulizer or vaporizer. In nearly all cases the subjective symptoms and the local appearances improved. In no case did complete healing of an ulcer take place. In this respect the author's experience does not bear out the representations of Rosenberg and others. Three propositions are offered: 1. Spontaneous cure of a tubercular ulcer of the larynx may occur. 2. A simple erosion or ulceration may be mistaken for a tubercular ulcer. 3. The best results from local treatment of the larynx may be expected in cases of incipient or limited pulmonary disease and in primary laryngeal tuberculosis.

DR. F. H. POTTER, of Buffalo, N. Y., then read a paper *On the Use of Menthol in the Upper Air Passages*, in which he reported the results obtained from its local application during the past three years. These results indicate that menthol controls superficial inflammations; that it is an analgesic and second applications can be made in increasing strength without discomfort; that it is destructive of some of the low forms of life, especially the bacillus tuberculosis, and that it is a valuable antiseptic in nasal surgery. It has an important place in the treatment of atrophic conditions. It can be used in strengths from 1 to 50 per cent., dissolved in an oil. The *Oleum Petrolina*, one of the petroleum preparations, the author considered the best for this purpose of dissolving the drug. It can be applied quickly by the cotton applicator or by means of the spray, or by vaporization. The direct method answers best in the pharynx, the spray and the vapor for the nose and larynx. Five cases of laryngeal phthisis consecutive upon disease of the lungs were also reported, in which the menthol treatment gave satisfactory results, the local diseased processes improving rapidly under its use.

DR. E. FLETCHER INGALS, of Chicago, Ill., read a paper entitled *Electrolytic Treatment of Cystic Goitre*. Various conventional methods of treatment of cystic goitre were referred to by the author, and especially that of Sir Morell Mackenzie, first published in 1872, and which is pronounced in Holmes' System of Surgery as the most efficient. It consists, as is well known, of injecting into the cyst a solution of perchloride of iron, plugging the canula of the trocar and allowing it to remain in three days, and repeating the procedure until suppuration occurs, aided by the use of poultices. The author claims that electrolysis promises more rapid cure and better re-

sults, and is attended by less danger and objectionable features. In support of this position he gave the history of two cases treated by himself.

In the first case, after the use of other methods had proved inefficient, electrolysis was employed. One pole, a needle, was introduced into the cyst, the other placed upon the tumor. By previous tappings the tumor had been found to be about one-third solid. From six to ten Leclanché cells were used for about ten minutes. This was repeated at intervals of a week three or four times, when the tumor ceased to refill and has remained cured. The solid part was unchanged and has not increased since. The second case was one which had existed for several years and had been injected with iodine and other fluids. On February 23 the tumor was found not to have diminished in size. Electrolysis was now used as in the former case. In a month from that date the cyst had ceased to refill and had been completely eradicated by electrolysis. The strength of the current in this case was graduated by the ability of the patient to bear it.

DR. HOLBROOK CURTIS, of New York, read a paper on *Anæmia and its Relation to Nasal Stenosis*. By a tabulation of cases he demonstrated that nearly all patients with stenoses were anæmic, the percentage of oxyhæmoglobin being only about one-half that of normal blood. In his experiments he had used the hæmatoscope of Hénocque, and had again tested the blood after several weeks had elapsed. The conclusions arrived at were that the increase of oxyhæmaglobin in the blood after operations on the septum is directly proportional to the relief afforded an impeded nasal respiration. This increase is constant and averages about 2 per cent. in the six weeks immediately following operations in which the stenosis is about 50 per cent., or in which the nose is doing but one-half its work. Cases should not be operated upon whose blood shows by spectrum analysis less than 6 per cent. of oxyhæmoglobin, as profound hæmorrhage is apt to occur. Records had also been kept in regard to body weight, chest measurement, and capacity of the lungs by the spirometer. These factors also exhibited improvements after operation.

THIRD DAY, JUNE 27.

DR. J. E. SCHADLE, of St. Paul, Minn., read a paper on *Cough in its Relations to Morbid States of the Nasal Passages*, in which he stated that the symptomatology of morbid processes seldom presents a more perplexing subject for analysis as to its primary cause, than that of cough. A chronic cough, whose persistency will not yield to ordinary methods of treatment, and whose ultimate significance is sometimes difficult to understand, is calculated as much as any other single condition to establish in the mind of the sufferer extreme anxiety. An important interest belongs to

this subject, especially in its *practical* relations to morbid states of the nasal passages. Three cases were reported in which chronic cough of long standing was cured by directing proper measures of treatment to a removal of the existing nasal disease, consisting in one, of posterior hypertrophies of the inferior turbinated bodies, one nasal stenosis, caused by deformity of the nasal septum, and one, chronic nasal catarrh. The author maintains that when cough is thus pathologically connected with morbid states of the nasal passages it is usually produced by reflex nervous influences or paresis of the vaso-motor blood-vessels of the intra-nasal mucous membrane.

DR. CHARLES DENISON, of Denver, Col., read a paper entitled *A New Mouth Gag. Together with the consideration of other possible aids to better results from Intubation of the Larynx*. The author presented a table of his intubation cases, numbering 25, with 7 recoveries. These were shown to be a severe class of cases. The author had experimented to construct a better gag than that usually employed, and exhibited four of the new varieties made. The next to the last one, made by Tiemann & Co., is intended to be held close to the left cheek of the child by the assistant, and is calculated not to get out of place during the operation. A new feature about all these gags, an idea of the author's, is to have the teeth troughs made somewhat swivel, so that they will fit any angle of the jaws, *i. e.*, any aged child. The power to open the jaws is afforded by a lever attached to a toggle-joint placed between the two sidearms of the instrument.

The last gag was simpler in construction, more compact, and gave greater power to open the mouth of a rebellious patient. In fact it cannot be resisted. A pin on one arm lies in an elliptical groove attached to a circular plate, the center of which is pivoted to the other arm of the gag. By three turns of this plate the extreme distension required in any mouth is obtained. The author had been bitten, and had other accidents, from the loosening of the original gags sold with the O'Dwyer sets of tubes. This last instrument was made by H. Rauchfurs, of Denver. The great necessity for earlier intubation than he thought was customary with operators was then shown. In two successful cases when the author had intubated he had been led to avoid delay by noting that the tension of the pulse was less during expiration, showing that there was already suction of blood back into the thorax during inspiration, in other words, an aspiration because of the laryngeal constriction was taking place. The author called this an *edema* of the *air-cells*, and he was led to believe that this was the inauguration in young children of a catarrhal process in the lung periphery and bronchial tract, usually resulting in death in from twelve to forty-eight hours after intubation.

In 9 of his 18 fatal cases death came in an average of twenty-six hours after intubation, and these deaths were by the writer attributed to this aspiration *œdema*, or "aspiration pneumonia," as Dr. O'Dwyer calls it. A case in illustration was given where the author desisted from intubation because the child was evidently dead. He directed this patient, a little boy 4 years old, to be laid back upon the bed, when noticing another gasp he thought he would intubate anyway. He did so as the child lay on his back upon the bed and without the use of any gag whatever. Artificial respiration was then used and the child resuscitated. After half an hour the child drank some milk, was bright, and the household was filled with hope. However, as might be expected, the child died in twelve hours. This counted as one of his cases of "aspiration *œdema*."

Again the author introduced what he supposed might be an important consideration, with reference to the remarkable fatality from pulmonary complications, both after tracheotomy and intubation. After intubation the records thus far given show 60 to 70 per cent. of the deaths to have occurred from "extension to bronchi," etc. This cannot otherwise be explained except that damage had occurred before and at the time of operation, or else, as the writer suggested as possible, after the operation, and because of the practical abolition of the use of the larynx. He wished to ask that this latter point be investigated, and that someone competent to give the answer would state, *What is the result of this substitution of an inflexible metal tube for the delicately-organized human larynx*, especially in extreme youth, a period when most of these accidents occur? A solution of this problem might lead to the use of somewhat elastic or flexible tubes. While the question of "aspiration *œdema*" might suggest the use of the sphygmograph to determine the need of an early operation, as well as after either intubation or tracheotomy the substitution of condensed air for the inhalation of air at the ordinary pressure. The use of the pneumatic cabinet may here perhaps be most advantageously employed. Judicious experimenting by those who have cabinets might result in good.

It was claimed that only in some new way of management would this fearful mortality from lung complications after intubation be greatly lessened. The condition of sepsis does not explain it, nor does the entrance of food through the tube.

DR. D. N. RANKIN, of Alleghany, Pa., read a paper on the *Effects of Natural Gas upon the Upper Air Passages*. Natural gas was first used in Pittsburgh as a fuel in 1883. The complaints were loud and many that the heat that it produced made the air too dry for breathing and produced irritation of the throat and nose. Some ceased to use it, others moistened the air with steam from

kettles of hot water, etc. The dryness was not imaginary. It cracked furniture and joints in woodwork—pianos and other expensive furniture was ruined by opening glued joints, etc., before steam was used to moisten the air. It is of great benefit for fuel and light in manufactories and dwellings on account of its cheapness. Before it was learned how to control it explosions occurred. As now managed this rarely occurs. Natural gas is not new. It is mentioned by the ancients, "The Holy Fires of Baker." It was utilized in Germany at Gollesgabe for illuminating purposes. In Pittsburgh and vicinity there are now used 600,000,000 cubic ft. daily. The author gave a chemical analysis of the gas, which disclosed its noxious properties when inhaled.

Patients usually complain first of dryness of the nose and throat, followed by free discharge of muco-purulent matter from these cavities; after which the dryness recurs, sometimes the irritation extending to the larynx and producing considerable hoarseness. Examination with reflected light shows considerable congestion in the nose and pharynx. The extreme sensibility of these parts is promptly relieved by 4 per cent. solutions of cocaine, followed by the application of vaseline to the nose and pharynx. At first gas pipes were made of too porous metal and leaked. This has now been remedied, and now those who have had the gas removed from their dwellings are having it restored.

Conclusion: Since the various improvements in managing it have come into operation the gas can be used without fear of suffocation or any deleterious effects, such as result from inhaling too dry atmosphere. Certainly it is not healthy to breathe, but since it has been taught how to use it, it is no longer breathed by those who use it.

DR. GEORGE A. RICHARDS, of New York, read a paper: *Empyema of the Frontal Sinuses*. The author reported a case of empyema of the frontal sinuses due to obstruction of the infundibulum by polypi which had existed fifteen years. The empyema had produced absorption of the lower wall of the sinus and a small tumor had appeared at the root of the nose about eight months before patient consulted. Opening made into swelling and tube passed through into nose, after about twenty polypi were taken out. After thorough cleansing thrice daily for about a month, patient recovered completely, sight improving at once, also a complete relief to a previously very marked aprosaxia and great improvement in general health, as well as in breathing and smell. Of forty-eight cases collected from literature, only fourteen cases were the result of injury, and but seven the result of obstruction. Some cases occur many years after injury. The majority occur without known cause.

The symptoms are more or less those of an ordinary coryza, together with a feeling of disten-

sion, exophthalmos, diplopia, failure of eyesight, and the appearance of a tumor over the superciliary ridge or at the root of the nose. Hard at first, this soon becomes soft and fluctuating. The only treatment is to make an external opening and an opening into nose through which a perforated rubber tube should be passed. Cleanliness and free drainage are most important. Of twenty-five cases so treated cure resulted in twenty-three; in two result was not stated; while when drainage into nose was neglected, the results were not nearly so good. Death occurred in six cases: in four from secondary cerebral abscess, in another from meningitis, and in the last from albuminuria.

DR. A. B. THRASHER, of Cincinnati, read a paper on *Morbid Perforations of Nasal Septum*. The author reported sixteen cases of morbid perforation of septum narium, having special reference to the syphilitic theory of the origin of the disease. Three of the cases occurred in syphilitics, eleven where syphilis had not been present, and two cases were doubtful. In the syphilitic cases the vomer and at least one of the turbinates was invariably attacked; and pain was always felt when this was the case. In the non-syphilitic cases the perforation, as a rule, gave rise to no symptoms; at times seemed to have been caused by picking the nose with finger-nail. There was localized anæsthesia in the ulcerated area, the application of the galvano-cautery producing no pain. The treatment consisted, locally, in detergents, caustics to the ulcerated area, and mild ointments; internal, in remedies addressed to the underlying dyscrasia.

DR. CARL SEILER, of Philadelphia, read a paper on *Clinical Observations on some Cases of a Peculiar Character*, in which he describes the symptoms of a disease not yet well known. He had not seen Dr. W. C. Glasgow's paper read at the Medical Congress at Washington last autumn before the Laryngological Section, and therefore confined his remarks to his own personal observations.

The run of symptoms of cases observed by the author are summed up as follows: 1. Neuralgic muscular pains, usually in the back and chest, and often in the head, ears and limbs. 2. Extreme debility. 3. Mucoid infiltration of the submucous tissue and the formation of thin white pseudo-membranous patches on the surface of the mucous membrane. 4. Absence of febrile symptoms at first, and later high temperature and relatively low rate of pulse. 5. Absence of albumen in the urine and liability to heart failure. 6. Gradual melting away of the pseudo-membranes and the absence of any odor from them. 7. The wide geographical distribution in this country and the infectious, but not contagious, nature of the disorder. 8, and finally. The specific action of benzoate of soda in relieving the symptoms promptly.

DR. E. S. SHURLEY, of Detroit, Mich., read a paper on *The Hot Air Treatment of Phthisis*. The paper was for the purpose simply of reporting progress in the use of the Weigert apparatus, and suggesting certain indications for its future trial. The author had used the apparatus in about twenty patients, in about eight with that constancy and exclusiveness that would serve as a test.

Case 1.—Obligated to discontinue the treatment from the pain experienced in the throat and chest from the inhalations.

Case 2.—Administered three and four times a day for fifteen minutes. Temperature 120° to 200°—the latter on three occasions only; 130° to 190° on several. Immediate effects good; left hospital *improved*.

Case 3.—Inhalations caused nausea and vomiting. Hectic fever decreased, gained strength and flesh.

Case 4.—Caused febrile movement, pain in chest, breathlessness and nausea at 120°. Discontinued after ten days.

Case 5.—Laryngeal and pulmonary phthisis. Administered for a week; could not bear it longer.

Case 6.—Advanced stage of phthisis. Administered three times a day for twenty-five minutes at a time—could not bear it and it was omitted.

Case 7.—Effects good.

Case 8.—Obligated to discontinue after fourteen days from loss of appetite, apparently resulting from the administration of hot air.

The author had found it impossible to apply the method of treatment for such a length of time as reported to have been done in Germany.

DR. W. K. SIMPSON, of New York, gave the *History of a Case of Acute Rheumatic Laryngitis of Gonorrhœal Origin*. The history is presented on account of extreme rarity of the case—have been unable to find references to similar case. The patient was first seen on February 23, 1888, at which time these notes were taken. Gave the history of two previous attacks of gonorrhœa, has had present attack of gonorrhœa for last five weeks. Three weeks ago began to have rheumatic pains and stiffness in both knees and hips. Three days ago pain and swelling began in left thumb and wrist, so that they now present the typical swelling of acute rheumatic inflammation. Laryngeal symptoms began three days ago, with painful deglutition; on following day there was a painful swelling of lower external portion of larynx. In the evening patient became very hoarse and breathing became very painful.

February 23, 1888. Examination of the throat to-day revealed painful deglutition, pain on pressure over right side of pharynx, absence of cough. Internally both arytenoids swollen and red, right much in excess, it being somewhat œdematous, and is, with the right vocal cord, immobile on phonation. Whole of anterior portion of larynx more or less hyperæmic, the right vocal cord

being of a deep purple color and considerably swollen.

Treatment consisted of ac. salicyl., which did not prove effective. Internal laryngeal swelling increased, embarrassing respiration. On February 29 a blister was applied to external larynx and patient placed on iod. of potass., and by March 6 had improved greatly in laryngeal symptoms, but there still remained very little motion of the right arytenoid and cord, and they were both still very red.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

The Father Damien Memorial Meeting at the Mansion House—Picrotoxin as an Antidote to Morphine—Honors to Sir Andrew Clark—The Lord Mayor Inaugurates a Fund for the Pasteur Institute—A New Method of Disposing of the Dead—A New First Field Dressing—The New Commissioner in Lunacy—Consumption can be Transmitted to Human Beings through Milk.

The first meeting of the committee for promoting a memorial of Father Damien has been held at Marlborough House, under the presidency of the Prince of Wales. The proposal is to erect a monument to the deceased missionary over his grave at Molokai, to establish a leper ward in one of the London hospitals, to endow one or two traveling studentships for the special study of leprosy, and finally to set on foot a full and exhaustive inquiry into the whole question of leprosy in India. It is calculated that there are in the Indian Empire about 250,000 victims of the loathsome scourge, or about one-thousandth part of the whole population, while in the British Colonies it is infrequent, but it is said to be spreading. The Prince of Wales mentioned one startling instance of its presence in England: "At this very moment," said he, "there is a leper with his hands distinctly affected by the disease, engaged at his business in one of the large London meat markets." Sir James Paget in a speech expressed the hope, that the designed stimulus to trained investigation might lead ultimately to the abolition of leprosy. At one time as he observed leprosy prevailed extensively in England and in the west of Europe, and he considered that its gradual elimination is after all not an impossibility. At one time there were six or eight hospitals for lepers in London. The victims were scattered all over England, and there were large numbers in France. Sir James thought that the only way in which it could be reached where it now prevailed was by scientific inquiry, and by improved methods of treatment.

Looking back over the last fifty years, it certainly might be said that more remarkable things had been accomplished than would now be accomplished if leprosy were abolished.

Picrotoxin is now recommended as the best antidote to morphine. The effect of morphine is, of course, to paralyze the action of the respiratory centre; picrotoxin on the contrary, when given in small doses increases such action. Thus the two drugs act in a directly opposite way. An overdose of morphine produces paralysis of the respiratory organs, picrotoxin prevents such paralysis. Picrotoxin stimulates the vaso-constrictor centre of the medulla, and thus counteracts the diminution of the blood pressure due to an overdose of morphine. These two agents again have an entirely opposite effect upon the cerebral hemispheres. Experiments are being made as to the use of the drug in the prevention of asphyxia from chloroform.

The Duke of Cambridge has consented to present to Sir Andrew Clark the senior consulting physician of the London Hospital, his portrait by the late Frank Holl, which was exhibited at the Royal Academy exhibition last year, and subscribed for by the medical and surgical staff and friends of the hospital. A replica of the painting will at the same time be presented to the College of the London Hospital Medical School.

The Lord Mayor was so struck with the Pasteur Institute which he visited while in Paris, that he has called a meeting at the Mansion House to inaugurate a fund for its benefit. The Prince of Wales also paid a visit to the institute during his recent stay in Paris, and was much interested in all he saw. At the same time, as far as hydrophobia is concerned, many authorities on the subject are resolutely opposed to any Pasteur Institute being established in England, contending that by the strict use of the muzzle and a system of quarantine with regard to all dogs imported into Great Britain rabies can be effectually stamped out, the insular position of the country giving it an advantage in this respect not possessed by Continental countries.

A physician whose name does not transpire, has, it is stated, suggested a new method of disposing of our dead, which to say the least, is broadly original, even if it has poor opportunity of becoming popular. In all seriousness the following process is suggested. The doctor proposes to deal with the deceased by means of hydraulic pressure, and in a very short time to reduce him to a cube of twelve inches, a solid block of handsome material resembling veined marble, tasteless, odorless and apparently imperishable. The doctor is stated to have on exhibition a capital cross suitable for a lady's dressing-room. It would at least be interesting to know this gentleman's name, and to see the result of, say one experiment.

A new "first field dressing" devised by Surgeon-Major Bourke, of the Army Medical Staff, is about to be generally adopted in the army. The pad is about 5 inches by $3\frac{1}{2}$ inches, and the bandage about $1\frac{1}{4}$ or $1\frac{1}{2}$ yards in length, the former being composed of layers of cotton-wool, and the latter of soft cotton gauze. Both are rendered antiseptic by being evenly impregnated with double chloride of mercury and ammonium, which for surgical purposes, has many advantages as compared with sublimate. With each of these pads is supplied a safety-pin and a little bag of iodoform powder for "dusting" purposes.

The new Commissioner in Lunacy, Dr. Thos. Clifford Allbutt, is one of the most distinguished physicians in the whole of Yorkshire, and his enforced removal from Leeds is regretted by ever so many people in that great manufacturing town. Dr. Clifford Allbutt is a man of about 50, with fair hair, and singularly light eyelashes. He received his education, medical and general, at Cambridge—of which University he is an M.A.,—St. George's and Paris, and is F.R.S., F.S.A. He has been consulting physician to various public institutions in Leeds and the neighborhood, and has enjoyed a very large private practice, indeed, it is said of not far off £10,000 a year. As a lunacy commissioner Dr. Allbutt will get only £1,500, but of course a man of his great scientific attainments looks at the matter from the point of view of Kudos as well as of Kerdos. Dr. Allbutt has paid much attention to mental pathology.

Dr. Imlach, of Liverpool, who has given a good deal of attention to the subject, has come to the conclusion that consumption can be transmitted from cows to human beings through milk. His experiments prove that guinea pigs, rabbits and monkeys fed on the milk of tuberculous cows develop tubercular disease.

It may not be generally known that until the sixteenth century alcohol was used only as medicine. It was as a drug, and not as a beverage, that it became known as aqua vita, from its great restorative powers. In 1681 it was first introduced as part of the food allowance of the British Army in the Netherlands. G. O. M.

NEW INSTRUMENTS.

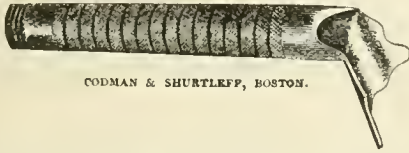
IMPROVED VAGINAL DEPRESSOR SPECULUM.

BY HENRY O. MARCY, A.M., M.D., L.L.D.,
OF BOSTON.

The general adoption of irrigation during surgical operations has materially modified the practice of most American gynecologists in operative measures upon the uterus and vagina; the Sims' speculum and semi-prone position often being very inconvenient.

The patient upon the back, with the hips well over the edge of the table, limbs held by the Clovis' crotch, or some modification of it, furnishes the most convenient position. The depressor in more general use in the one known as the Martin speculum, devised by Dr. A. Martin, of Berlin. This has been found inconvenient and objectionable, because the solid handle causes the drip from the irrigator to flow over the hand and down the arm of the holder, and the breadth of the blade is widest at the vulvar extremity. This often produces overstrain of the vaginal outlet, with frequent lesions, and also occupies valuable space required for operative measures.

Dr. Marcy has sought to overcome these objections in the instrument which he offers to the profession.



Because of its simplicity there is little need for explanation. The vaginal portion is constructed so as to cause a minimum of pressure upon the vulvar outlet. It is irregularly broadened within, so as to secure a firm hold upon the levator muscular loop without slipping, and this allows of depression without overstrain of the external parts, and permits the foreshortening of the instrument to the minimum, scarcely more than one inch in length.

When the uterus is of normal mobility the cervix can be easily brought to the vulva. By its use the anterior vaginal wall and the uterus are rendered much more accessible. The handle is made hollow for the escape of the irrigating fluid and roughened for a secure hold. The speculum is well made and kept in stock by Messrs. Codman & Shurtleff, of Boston, and Tiemann & Co., of New York.

NECROLOGY.

Francis M. Urquhart, M.D.

Francis M. Urquhart, Passed Assistant Surgeon U.S. Marine-Hospital Service, was born in Southampton County, Va., December 3, 1857, and died at Evansville, Indiana, February 14, 1889. Dr. Urquhart received his early education in Hanover Academy, Hanover County, Va., and subsequently entered the medical department of the University of Virginia, from which he graduated in the spring of 1878. He pursued the study of medicine one year in New York City under Dr. John A. Hyeth, and there entered the Charity Hospital of that city, where he remained two

years. In the spring of 1881 he appeared before the Board of Examiners of the Marine-Hospital Service, which he passed successfully, and was appointed to the Service as an assistant surgeon, October 20, 1881. He was assigned to duty in the Marine Hospital at New York, and served at that station until April, 1882, when he was transferred to St. Louis, Mo., where he remained till January, 1885, except when upon temporary details at other forts. In December, 1884, he was promoted to the position of Passed Assistant Surgeon. During the summer of 1885, '86, '87 and part of 1888, he was placed in charge of the Quarantine Station at Cape Charles, Va. In August, 1888, he was detailed for special duty in the yellow fever districts of the South, and was successively stationed at Way Cross, Ga., Dupont, Ga., and Live Oak, Fla. In November, 1888, he was ordered to Evansville, Ind., on temporary duty, and while under orders for Buffalo, N.Y., died at the former station, where he was taken sick soon after his arrival. A low form of fever of nearly two months' duration, followed by a relapse and subsequent pneumonia, ended his career. Dr. Urquhart took a high rank in the Service, and enjoyed the confidence of his superior officers, whose orders he obeyed with alacrity. He married Lizzie M. French, of Boston, Mass., in September last, while still on duty at the South, and his bride was with him during his long illness at Evansville, Ind., where he died.

BOOK REVIEWS.

THE RADICAL CURE OF HERNIA. By HENRY O. MARCY, A.M., M.D., LL.D. The Physicians Leisure Library. Detroit Mich.: George S. Davis.

A highly interesting and well written volume of 251 pages, illustrated by eighteen woodcuts. In this work each form of hernia receives attention proportionate to its importance. Not only is the subject taken up from an anatomical and surgical point of view, but our obligations to our predecessors are not ignored. The voluminous history of this important subject is very ingeniously brought together, and so well told that we trace its progress step by step, to the perfect methods of to-day. The views and modes of operating among the most eminent of modern surgeons both here and abroad are fully given. Important results have been brought about by simply modifying the various steps in this operation so that they are more consistent with the maintenance of a perfect aseptic condition. There are four steps to be considered:

1. The mode of incision.
2. The treatment of the sack.
3. The application and choice of

sutures. 4. The treatment of the wound. The author advocates the open wound method. In inguinal hernia he frees the sack, sutures it as high up as possible with the double continuous suture, and cuts away that portion below. All is closed in with the buried animal suture, and kept in a thoroughly aseptic condition. If this is maintained no drainage has been found to be necessary.

In studying the action of various forms of animal sutures buried in the tissues, the author has done no little to advance this branch of surgery. As early as 1870 he had demonstrated experimentally that aseptically applied animal sutures became so incorporated into the vital structures as to be, in a large measure, replaced by connective tissue. It was found that the absorption of catgut often progressed too rapidly, and the parts were left too early without sufficient support, hence the tendon from many animals was experimented with, and various modes of preparation tried. The author has used tendon from the tail of the kangaroo for the past seven years, and finds it all that could be desired.

The reports of operators quoted give 779 cases operated upon with only five deaths, and these are explained as being produced by causes other than the operation.

MISCELLANY.

AMERICAN RHINOLOGICAL ASSOCIATION.—Owing to the absence of a number of the Fellows of the American Rhinological Association in Europe, and the Pacific Coast, the annual meeting will be postponed until October 9, 10 and 11, 1889, at which time it will be held at the Palmer House, Chicago, Ill.

THREE HUNDRED NEW READERS.—THE JOURNAL has added to its mail list, since July 1, over 300 new names. The weekly issue is now 5,200.

LETTERS RECEIVED.

Dr. A. D. Ruggles, New York; Dr. J. R. Shapard, Scottsville, Ky.; Dr. Ben H. McClellan, Xenia, O.; Hess Printing Co., Omaha, Neb.; Dolliber Goodale & Co., Boston; Dr. James Bullett, New York; Dr. Charles F. Fisher, Clayton, N. J.; Dr. V. Mott Francis, Newport, R. I.; B. Westermann & Co., New York; Royal Medical and Chirurgical Society, London, Eng.; Dr. Henry O. Marcy, Boston, Mass.; Dr. Archibald Church, Chicago; Dr. Wm. B. Dewees, Salina, Kan.; Dr. G. L. Magruder, Washington; F. A. Davis, Philadelphia; P. Blakiston & Co., Philadelphia; Dr. L. T. Day, Westport, Conn.; Dr. R. Harvey Reed, Mansfield, O.; Dr. J. C. Hoag, Chicago; The St. Paul Book & Stationery Co.; Dr. H. V. Sweringen, Ft. Wayne, Ind.; Dr. Joseph Jones, New Orleans, La.; Dr. William F. Waugh, Philadelphia; I. Haldenstein, New York; Dr. Thomas Opie, Baltimore, Md.; Dr. L. T. Day, Westport, Conn.; Fred. D. Van Horen, New York; Oneita Spring Co., Utica, N. Y.; J. H. Bates, W. P. Cleary, New York; Dr. L. F. Billings, Barre, Mass.; Obstetrical Society's Library, London, Eng.; Dr. A. W. Bower, Columbus, O.; Dr. H. W. Quirk, Cleveland, O.; J. Walter Thompson, New York; Dr. J. C. Reeve, Dayton, O.; Rev. Wm. R. Scott, Sterling, Kan.; Dr. Maris

Gibson, Wilkesbarre, Pa.; Dr. E. H. Whitcomb, Greenwich, N. Y.; J. L. Hillmantel, Missoula, Mont.; Dr. L. J. King, Visalia, Cal.; Dr. James Dudley Morgan, Washington.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from July 20, 1889, to July 26, 1889.

By direction of the Secretary of War, Major William H. Gardner, Surgeon, is detailed to attend the encampment of the National Guards of the District of the Columbia, at Ft. Washington, Md., from July 22 to 29, 1889, for the purpose of giving instructions to the medical officers and hospital corps in their respective duties. Par. 1, S. O. 164, A. G. O., July 18, 1889.

By direction of the Secretary of War, Capt. Wm. R. Steinmetz, Asst. Surgeon, now at Baltimore, Md., on leave of absence on account of disability, will report in person to the commanding officer of the Watertown Arsenal, Mass., for duty at that station, relieving Lieut.-Col. James C. McKee, Surgeon. Par. 3, S. O. 166, A. G. O., July 20, 1889.

Lieut.-Col. McKee, on being relieved at the Watertown Arsenal, will repair to Philadelphia, Pa., and assume the duties of attending surgeon and examiner of recruits in that city. Par. 3, S. O. 166, A. G. O., July 25, 1889.

Capt. Samuel Q. Robinson, Asst. Surgeon U. S. A., Ft. Hamilton, N. Y. H., is hereby granted leave of absence for two weeks. Par. 11, S. O. 165, Hdqrs. Div. of the Atlantic, July 22, 1889.

Lieut. R. R. Ball, Asst. Surgeon U. S. Army, leave of absence granted in S. O. 87, Dept. of the Missouri, July 9, is extended five days. Par. 1, S. O. 167, A. G. O., July 22, 1889.

PROMOTION.

Asst. Surgeon Charles B. Ewing, to be Asst. Surgeon with the rank of Captain, after five years' service, in accordance with the Act of June 23, 1884. July 5, 1889.

By direction of the President, the State of Arkansas, embracing Little Rock Barracks, is transferred to the Department of the Missouri. General Orders No. 66, Hdqrs. of the Army, A. G. O., July 19, 1889.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service. Omitted from last Announcement.

Surgeon John Vansant, when relieved, to proceed to Mobile, Ala. July 11, 1889.

P. A. Surgeon F. W. Mead, relieved from duty as acting Chief Clerk and attending surgeon; ordered to St. Louis, Mo., July 11, 1889.

P. A. Surgeon L. L. Williams, relieved from duty at Cape Charles Quarantine Station; ordered to Baltimore, Md. July 10, 1889.

Week Ending July 20, 1889:

P. A. Surgeon P. C. Kalloch, granted leave of absence for thirty days. July 15, 1889.

Asst. Surgeon W. J. Pettus, when relieved, to proceed to Marine Hospital, Boston, Mass., for duty. July 18, 1889.

Asst. Surgeon R. M. Woodward, granted leave of absence for thirty days. July 15, 1889.

Asst. Surgeon G. T. Vaughan, relieved from duty at Boston, Mass.; ordered to Norfolk, Va. July 18, 1889.

Asst. Surgeon J. B. Stoner, granted leave of absence for twenty-five days. July 15, 1889.

Asst. Surgeon H. D. Geddings, relieved from duty at Baltimore, Md.; ordered to Key West Quarantine Station. July 18, 1889.

Asst. Surgeon C. P. Wertenbaker, relieved from duty at Norfolk; ordered to Galveston, Tex. July 18, 1889.

J. T. Groenevelt, commissioned as Asst. Surgeon July 14, 1889. Ordered to Gulf Quarantine Station for temporary duty. July 20, 1889.

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No. 6.

ORIGINAL ARTICLES.

CONCUSSION OF THE SPINE IN ITS MEDICO-LEGAL ASPECTS.

Read in the Section of Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association, held at Newport, June 25, 1889.

BY HENRY HOLLINGSWORTH SMITH,
M.D., L.L.D.,
OF PHILADELPHIA.

The legal liability of Capitalists and Corporations to be charged with claims for pecuniary damages in cases of injuries received by individuals through a claimed negligence, was established by the English Parliament in the year 1846, and is widely known as Lord Campbell's "Liability Act." Somewhat similar statutes were subsequently enacted by the State Legislatures of this country, and this responsibility on the part of carriers and employers is generally regarded as wise and tending to the proper protection of life and limb.

In Great Britain the "liability act" is the same throughout the Kingdom, but in the United States it varies somewhat in different States, especially in the amount of damages that can be claimed. In Michigan the limit of a claim is fixed at \$5,000; in New York it is \$10,000; in Mississippi it is such compensation as shall be deemed fair and just in reference to the injury sustained by the plaintiff. In Tennessee it includes mental and physical suffering, loss of time, necessary expenses of the deceased and damages to the beneficiary, but in Pennsylvania, since the adoption of the new Constitution, there is no limit. In one case, in Philadelphia, the loss of a leg by a newsboy on a passenger railway was assessed by a jury at \$18,000; appealed to the Supreme Court, a new trial was ordered and a verdict for \$20,000 given, and this verdict has been paid. Another child, 8 years old, was awarded \$16,000 for injuries caused by tripping over a stone left on the sidewalk by the City Corporation, and very many other cases could be cited.

So generally is this liability for injury caused by negligence, admitted, that most corporations or employers do not hesitate at a prompt settle-

ment of a just and reasonable claim, being influenced thereto not only by a proper regard for the suffering induced, but also as an acknowledgment of "the Majesty of the Law," it being now a well-settled principle "that they are liable for past and future physical and mental suffering, together with the loss of earning power where the consequences are such as in the ordinary course of nature may be reasonably expected to ensue."¹

It is, therefore, not unusual for conductors, foremen, or other servants of corporations, to be instructed in the event of injuries received, to do all that is possible to ameliorate the sufferer's condition. Many companies have also surgeons regularly employed to render immediate professional attendance.

A recent example of the disposition of a corporation to promptly relieve suffering and settle a just pecuniary demand for injuries received in transit, is shown by the action of the Lehigh Valley Railroad, of Pennsylvania, where, after an accident to an excursion train at "Mud Run," in October 30, 1888, in which 63 persons were killed and over 80 others wounded, the company made a prompt and amicable settlement with most of the claimants, at a cost of over \$150,000, though the Coroner's Jury, after a rigorous examination of the case, failed to report any want of care or proper vigilance on the part of those in charge of the train.

Under the "liability law" a refusal to pay what may be regarded as a doubtful or extravagant demand, usually carries the claim into Court and confides it to the judgment of a not over-intelligent jury, who often appear to have an innate prejudice against all corporations or capitalists. In these cases the medical testimony as to the nature and probable result of the injury claimed to have been received, becomes often the turning point on which a just award can be given. The medical expert then, who correctly appreciates his responsible position, should keep himself thoroughly abreast with the progress of science and endeavor to exercise such judicial power as will enable him to hold the scales of justice so level that the preponderance of the medical facts once established, may correctly in-

¹ Patterson, "Railway Accident Law," Philadelphia, 1886.

cline the balance to the right side and lead a jury to a true and impartial verdict for that side to which it properly turns.

As many corporations have surgeons regularly engaged to serve them in these accidents, it is desirable that the correct position of such experts should be clearly defined, and the following judicial opinion on the "relation of scientific experts to the administration of the law," has recently been so well expressed by a Judge of the New York Supreme Court² (in regard to these duties and relations), that I repeat them in a condensed form. "In an action for damage," says Judge Willard Bartlett, "arising from accidents on railroads, the respective parties are often assisted by Surgeons, who testify to the nature, extent and consequences of the plaintiff's injury, and also often advise counsel as to the conduct of the surgical part of the case. A wise doctor should, however, take care not to act in both capacities. If he testify, he should not act as assistant counsel, and if he acts as assistant counsel he should keep off the witness stand, because he will naturally become prejudiced in favor of the party in whose service he is acting, and the jury will regard such a witness as prejudiced and his testimony as that of a partisan, thus materially detracting from the force and effect of his evidence. The attitude of the physician called as an expert, should be as nearly as possible one of entire impartiality as between the litigants." Judge Bartlett also says, "I have every reason to believe that cases are not unknown in which the plaintiff's counsel have said to a physician, 'I think my client's injuries are serious. Go and see him for me. If you find that he is not seriously hurt, I shall not expect you to charge me anything for making the examination, but if you conclude that his injuries are incurable, I will call you as a witness and pay you handsomely.' As this is manifestly incorrect, no such proposition would be accepted by a really honorable professional man of high character."

Unfortunately for justice, the medical testimony is often so conflicting that neither Judge nor Jury can properly estimate it. This diversity of opinion is sometimes due to the want of a proper study of a case, or, the varied experience and moral tone of the expert (and his views of right and duty between man and man), as well as to the fact that the science of medicine being always progressive, there is no fixed point on which an expert's opinion can be securely based, and *Page* has well said,³ "there must ever be differences of opinion in matters so difficult as the investigation of disease, but it is wholly possible to be impartial," whilst *Erichsen* says: (2)

"Conflicts of opinion on certain points are creditable to the independence of thought and the individual self-reliance that characterizes professional opinion."

The progress of microscopical, physiological or pathological studies of tissues, especially of the nervous system and the regional localization of the functions of the brain and Spinal Cord, which are peculiarly liable either directly or indirectly to be affected by these injuries, also tends to show that the professional opinions held twenty years since are now in many points incorrect and unreliable and those of *Mr. Erichsen* on "Railway Injuries and Concussion of the Spine," once often quoted, are mistrusted by many, who deny the correctness of his terms and object to his combination of different injuries under the one title of "Concussion of the Spine."

As every period of Court in our large cities presents one or more claims for personal injury, in which the results of concussion of the spine are often presented in an exaggerated form by Counsel (in what has been well designated as "Litigation Symptoms") to cover or sustain claims that could not otherwise be established as of sufficient magnitude to justify punitive or exemplary damages, it becomes important to settle, if possible, whether the so-called "Concussion of the Spine," "Railway Spine," or "Railway Brain," can exist, and if so, whether the so-called "Railway Spine" presents a special train of symptoms differing in any point from those induced by other forces than railway collision, and although many local societies and individuals have for years investigated these cases and their results, I desire now to present the question for the discussion of this Section in order to elicit a wide expression of the sentiments of those who here represent the surgical skill of the whole United States.

It is unfortunate that the consideration of the subject of "Concussion of the Spine" should be so much handicapped by the legal aspect given to it in the cases presented in claims in court; these cases frequently offering less marked symptoms than those met with in hospitals or private life where there is no prospect of the sufferer receiving an award from a jury. Formerly such claims could not be presented by *employés* and suits by them were rare. Thus prior to 1871 the German railroads were not liable for injury to their *employés* and the latter, being anxious to keep their places and gain their living, managed by an energetic effort of the will, to overcome and control their nervous condition; but as soon as the laws of Germany made corporations liable to their *employés*, the number of suits instituted from 1871 to 1876, on one railroad only, was at least nine times larger than before. Thus in fifteen derailments before 1871 there were but two injuries leading to claims for disability, whilst subse-

² Judge Willard Bartlett at the 61st Meeting of the New York Society of Medical Jurisprudence and State Medicine, New York, March 14th. (From the Philadelphia Evening Telegraph, March 15, 1885.)

³ Injuries of the Spine and Spinal Cord without Apparent Mechanical Lesion and Nervous Shock, by *Herbert W. Page*. Second Edition, London, 1885.

quently to 1871 seven derailments occasioned eighteen lawsuits.*

In all suits for damages for concussion of the spine it should be recollected that *fraud* on the part of a claimant is quite a common item in the legal investigation of this injury, and thus *Page* reports⁵ "234 cases, in a large majority of which there was either fraud or an exaggerated claim, as proved by subsequent history." *Hodges* reports,⁶ that "in 21 cases where so-called symptoms of concussion of the spine were alleged to be present and were under his personal care, 10 are believed to have been proved deceptions; whilst in 6 a diagnosis as to deception was doubtful. Of 28 similar cases reported by *Rigler*, 7 were found to be simulated and in 13 the diagnosis in regard to fraud was doubtful. Of these 49 cases, 36, or three-fourths of the whole number, were really or probably deceptions." *Hodges* also cites⁷ the following cases illustrative of fraudulent claims and unjust awards by juries.

"In 1872 the Metropolitan Railroad, of Boston, Mass., was mulcted by a jury in a sum of \$10,000 in the case of a man whose detailed symptoms satisfied them that he was utterly enfeebled in body and wholly unable to earn his own living. At the close of the trial the plaintiff celebrated his victory by becoming uproariously drunk, and it required the united strength of three policemen to take him to the Station House. In another suit in which there was a claim of impotency resulting from the injury, the jury expressed their sympathy by a verdict of \$18,000, yet not long afterwards the man was convicted of bastardy."

Judge Wilson, of the Court of Common Pleas, Philadelphia, also says,⁸ "I have in my mind a case where a very badly injured person was *substituted* at the trial and large damages obtained, whilst the real plaintiff was not injured at all."

The following case in my own practice illustrates an exaggerated claim and the liability of a surgeon to be deceived, either by a malingerer or hysterical man, when he places faith in the subjective symptoms presented by the claimant and apparently seconded by circumstances.

Case.—W., age 35 years, married, in full health at the time of the accident, claimed injuries from colliding trains at Havre de Grace, P. W. & B. road, on June 21, 1887. On Sept. 14, 1887, about three months subsequently, he exhibited three scars, one deep in the forehead and left eye-brow and a deep scar on the left of the upper lip, which he stated were the result of blows. He also exhibited a superficial scar from a wound on the inside of the right knee, not penetrating the joint; the patella bursa of this knee was also swollen, and he claimed to have been struck in the back, re-

ceiving a dark bruise that extended from the top of the shoulder to near the right hip. Of this bruise there was, on September 14th, no evidence, but there was apparent nervous disturbance, his right arm seeming to be paralyzed in motion and sensation, though his grip was fair. His memory, he said, was enfeebled, and he denied knowing what he had eaten for breakfast on the day of my examination. He also reported having been insensible for nearly four hours after the blow; that he was taken by train to Washington, D. C., and treated there; but that subsequently he was well enough to travel to Maine to escape the heat of the summer, and was improved by the trip. After full consultation with his family physician (Dr. Mecray, of Camden, N. J.), I reported to the railroad company that he had received the above injuries, but that the permanent disability claimed was not sustained by the evidence, as he was then apparently recovering. This opinion not being satisfactory to the plaintiff's lawyer, I was again requested to make a survey and report, on September 22, 1887. After a second examination and consultation with Dr. Mecray, I reported a slight improvement in the power and sensation of his limbs, as he now walked downstairs to his parlor and walked there with slight assistance, dragging his right foot a little and with his right arm drooping. His mind was also clear and he recalled events during his stay in Washington, D. C. I therefore gave an opinion, renewing my former statement, and mentioned the benefit apparent from his physician's treatment; that the patient complained of the tediousness of his confinement and was anxious to return to work, and that his doing so would probably advance his recovery.

Two months after this (November 11, 1887), Dr. Mecray wrote me:

"You will remember on your second visit to Mr. W. we were both inclined to give a favorable prognosis, as he was then able to walk about the house, to take moderate exercise, and was free from suffering, except from neuralgia of the left side of his head. Since then there has been a marked increase in the unfavorable symptoms." (The settlement of his extravagant claim for damages, \$15,000, was now becoming doubtful, the claim being for permanent disability.) "The paralysis of the right side," said Dr. Mecray, "has much increased, the right arm is entirely helpless, with the exception of a slight grip of the hand. The power of the right leg is totally gone, and there are no reflexes whatever. The urine dribbles from the bladder, the bowels are constipated, though under his control; vision in the left eye and hearing in the left ear are now much impaired; in fact I look upon his case as one of '*progressive and permanent paralysis*,' the result of pressure upon his spinal cord, possibly a breaking down of some of its tissues. His memory, I think, is

* R. M. Hodges, M.D., Boston Medical and Surgical Journal, April 14th to 21st, 1881, page 363.

⁵ Op. citat., Appendix, p. 296.

⁶ Op. citat., p. 363.

⁷ Op. citat., p. 364.

⁸ Philadelphia Daily Times, June 7, 1889.

slightly improved. He is confined to his bed and I fear will end his days there. Dr. D. Hayes Agnew, of Philadelphia, has seen him with me and concurs in my opinion. If you have any suggestions I will be pleased to hear from you." [Signed, A. M. MECRAY.]

On November 12, 1887, I again visited Mr. W., and had a third consultation with his attending physician, reporting to the company "that since my former visit from some unexplained cause Mr. W. had greatly deteriorated in health. For some weeks he reported himself unable to leave his bed for any purpose and is now apparently suffering, as his physician states, from "progressive paralysis." He has no motion in either arm, except in his fingers, nor is there motion in the lower right limb. Sensation on the right side is nearly destroyed, he giving no shrinking from the puncture of the skin by a pin thrust in till it brought blood. The left limbs are sensitive. His bladder is partially paralyzed; his urine dribbles from him, and he uses a bed-pan to evacuate his bowels, being unable to rise. He is very tremulous and nervous, with depressed circulation and more mental aberration." With this report I forwarded to the company the suggestion of delay in the settlement of the claim as the patient's condition, though then unfavorable, might be improved by time. Whilst giving much weight to the opinion of his physician, who saw him daily, I was yet unable satisfactorily to account for the deterioration in his condition, the respectability of his domestic surroundings and his own standing precluding the idea of malingering. The possibility of hysteria, as claimed by Charcot in such cases did not occur to me at this time. With this evidence from his medical attendants, his claim was abated and compromised by the company on January 19, 1888, for \$8,500. Six months subsequent to this, being doubtful of the result of his case, and desirous of satisfying myself of his ultimate condition, I wrote to Dr. Mecray asking his report to date, "for the cause of science," and on the 11th day of April, 1889, was informed by him that on *the day after the payment of the claim* Mr. W. arose from his bed, travelled to Washington, and in a few weeks was able to attend to his usual avocations. Was this a case of successful malingering, or was it paralysis from hysteria? It certainly was not, as supposed by the surgeons, "progressive paralysis;" though closely resembling it.

Admitting the liability of a surgeon to be misled in his Diagnosis and Prognosis of cases claiming to be the result of spinal injuries, it may be asked, 1st. Can any force be so applied as to produce a concussion of the spinal cord? 2d. How are the normal functions of the cord disturbed by such injury? 3d. What pathological changes in the cord result from its concussion?

1. Can any force be so applied as to produce

concussion of the spinal cord and its nerves? Concussion of the spinal cord from any violence sufficient to disturb its functions, whether by falls, blows on the back, or shaking and collision or derailment of cars, must be admitted as *possible*, as it is now demonstrated by post-mortem examination; but the violence must be greater than that sometimes created in coupling a locomotive to a train, claims for which I have frequently known to be made.

2. How are the normal functions of the cord disturbed by such injuries? Disturbance of the normal functions of the cord, or the symptoms of its concussion, can be recognized by evidences indicating a modification of normal cessation or motion in varied degrees as shown through the peripheral nerves. H. Fischer has recently suggested that the condition known to surgeons as "shock" is a traumatic reflex paralysis of the vascular nerves, the "*concussion of the brain*" being simply a shock localized in the brain, a traumatic reflex paralysis of the cerebral vessels, and V. Schöle applies this view directly to "concussion of the spinal cord." Erb, however, regards the symptoms of concussion of the cord as due to "molecular disturbance, and thinks this is the chief element in its concussion."⁹

Reference to the normal action of the cord best illustrates these symptoms.

According to Erb¹⁰ "all impressions made in any way on the peripheral nerves are conducted to the posterior or anterior roots of the spinal nerves and pass thence into the lateral columns of the cord and thence to the brain, as touch, temperature, tickling, etc. The sensation of *pain* is conducted exclusively by the gray substance of the cord. The *sensory* impressions decussate in the cord and medulla oblongata and *voluntary* movements pass *from* the brain to the cord, through the decussation at the pyramids, medulla oblongata and pons varolii."

The seat of the coördination of *movement* is not settled, but is supposed to lie only in the brain, the cord only transmitting the coördinate impulse to the muscles.

The centre of *vaso-motor innervation* lies in the cord and medulla, and Charcot says, "the nutrition of the peripheral nerves, muscles, bones, joints, skin, hair, nails, etc., is dependent on the action of the spinal cord," and of course these are impaired by its injury.

The disturbance of the function of the cord by injury or disease will, therefore, be noted (a) in disturbance of the normal *sensibility*, as anæsthesia, hyperæsthesia, paræsthesia; or abnormal sensations, as pain, either lancinating or neuralgic; (b) in disturbance of *motility* as shown in weakness or paralysis, or ataxia; or by increased mo-

⁹ Volkman's Sammling Klinische Vorträge, Nos. 10 and 27, as quoted by Erb.

¹⁰ Erb, Diseases of the Spinal Cord, p. 352, and from this monograph much that I have stated is condensed.

tility, as in spasms or twitching; (*c*) vaso-motor disturbance will be shown, in hyperæmia, increased redness with elevation of temperature and modified sensation, as in the old "rubor, dolor, calor" of inflammation, accompanied often by modified nutrition of the tissue affected.

3. What pathological changes in the cord are found as due to its injury or disease? Pathological changes may be noted first, in the disordered action of the blood-vessels concerned in the nutrition of the membranes and of the cord as (*a*), congestion or hyperæmia; hæmorrhages or effused blood; inflammation of the membranes or of the component cells of the spinal cord; (*b*), in anæmia; or we may have myelitis followed by softening or sclerosis; or (*c*), there may be changes due to malignant diseases or tumors, omitting all reference to changes from mechanical action, as wounds, fractures, or luxations of the bones forming the spinal canal.

The disturbed function of a spinal cord may, however, also be "due to a diseased or neuropathic disposition, either inherited or acquired, as by sexual excesses, which are common; exposure to cold and wet; intoxication; syphilis; excessive exertion and overtaxed muscle; acute diseases, as the exanthemata; fevers and pneumonia," so that in studying the results claimed as due to a concussion of the spine from injury, and especially in litigation cases for damages, too much care cannot be exercised in obtaining a full and correct history of the claimant *before* the accident and in a careful analysis of the subjective symptoms, so as to prove that the injury did not create them. If the disturbance is *functional* it can be cured and there may be no permanent disability. When a claimant is impecunious and seeks to repair his fortunes by a demand on a corporation or capitalist, the expert should carefully eliminate all symptoms not evidently free from the disorders of the spinal cord due to preëxisting diseased conditions, or show to what extent the accident was connected with them.

As Neurasthenia or *functional* disorder of the cord can produce all the symptoms often ascribed to violence, may we not doubt the correctness of Erichsen's opinion¹¹ in ascribing such symptoms to "concussion of the spine." Such doubts are daily becoming more numerous, and the varied nervous symptoms alluded to by him are assigned by more modern authorities to other causes. Thus Charcot says:¹² "The obstinate symptoms resulting from railway injuries are *hysteria* (or hysterical) and nothing else," and hysteria, according to Dr. Ozeretokofski, of Moscow, "is by no means an exceptional occurrence in men, presenting the same diversities in them that it does among women;" he having studied no less than thirty-

eight cases in the Moscow Military Hospital.¹³

The correctness of the opinion that concussion of the spine is common and creates special symptoms, has also been doubted by others; thus *Bramwell* says:¹⁴ "Whilst I am not prepared to deny the occurrence of simple concussion of the spine, I am disposed to doubt whether organic disease can or does result from it. Indeed, everything seems to show that when disease of the cord results from external violence, the disturbance of its functions depends, from the first, on definite and distinct alterations of structure; and there is good reason for supposing, that undoubted and severe disturbance of the spinal function *rarely* results from violence; the ordinary type of chronic disease of the spinal cord very rarely following railway concussion. Nothing in the whole range of inquiry stands out more prominently than the fact that the lesions which become the subject of medico-legal inquiry, are met with only in a *few* isolated cases."

Page says,¹⁵ "In fact, serious and undoubted derangement of the functions of the spinal cord as the result of simple concussion of the spine, is probably rare; whilst cases in which the symptoms of spinal shock do not appear for weeks or months after an accident, are *exceedingly* rare." He also remarks, "that there is no evidence that the victims of railway collisions, numbering thousands, have afforded a larger proportion of the degenerative conditions of the cord which have for years engaged the searching attention of pathologists, than those members of the community who have not suffered the same influences. There is no evidence that they have." *Bramwell*¹⁶ says, "I think the chronic diseases of the cord claimed to be developed by railway collisions are infinitely more *rare* than has hitherto been supposed." *Reynolds* describes¹⁷ "cases in which a patient has no intention to deceive, but really believes that he is the victim of serious organic disease. He is usually of a highly nervous temperament and often very active, mentally. His fixed belief *induces* functional disturbances, as twitching, muscular pain, excitable action of the heart, palpitation, exhaustion after slight exercise, and he becomes impressed with the idea that he is unable to do anything; that he is paralyzed and that he cannot sleep, awaking unrefreshed." Such cases I have often seen.

Reynolds' opinion and my own corresponds with that of Charcot and also of Grasset, who has described such cases¹⁸ "as hystero-traumatism or nervous affections sometimes resulting from wounds." *Knapp* says,¹⁹ "Whether there is a

¹¹ The *Lancet*, February 16, 1889, as quoted in N. Y. Med. Record, May 4, 1889, p. 504.

¹² *Bramwell* on Injuries of the Spinal Cord, p. 305, 12, 13, 19.

¹³ *Op. citat.* p. 107.

¹⁴ *Op. citat.*

¹⁵ Quoted in *Bramwell*.

¹⁶ *Lçons sur l'Hystero-traumatisme* par Grasset. Paris, 1889.

¹⁷ *Nervous Affections following Injury*. By Philip Coombs Knapp, p. 5. Boston, 1888.

¹¹ On the Concussion of the Spine, Nervous Shock, etc. By John Eric Erichsen. Revised Edition. New York, 1886.

¹² *Lçons sur les maladies du système nerveux*, par Charcot. Paris.

true concussion of the spinal cord is still a matter of doubt. I mean a paraplegia following injury, where the cord has sustained no coarse mechanical lesion, where molecular changes in its finer nerve elements have occurred, giving rise to immediate and complete functional paralysis."

Although this evidence shows doubts as to the results often claimed as those of spinal concussion, it has been recently demonstrated that the spinal cord may be occasionally so shaken as to ultimately induce molecular changes in its structure without any injury to the canal, this being proved by post-mortem examination and the investigation of the minute structure of the cord under coloring, hardening and microscopical sections; but such cases are certainly very rare.

As muscular nutrition is dependent on a proper nerve supply, its deficiency will indicate such changes in the cord as atrophy, softening, etc., and Gower in his recent work says,²⁰ "Any destruction of the nerve cells will also cause degeneration of the motor fibres proceeding from those cells, with wasting of the muscles to which these motor fibres proceed." Hence, injury to the spinal cord should always be indicated by muscular atrophy in a more or less marked degree, and when no change is noted in the nutrition of the muscles, doubt may well exist in the mind of the expert as to there having been any concussion of the spinal cord.

A demonstration of the muscular development and power of a claimant may then well be made to a jury, in explanation of the condition of the plaintiff's nerves claimed to be impaired by the concussion. Gower also states that "Visceral control especially of the bladder and rectum (though the latter is sometimes under the immediate control of the branches of the sympathetic nerve), is also related to centres in the spinal cord, and although the action of the bladder and rectum can to some extent be controlled by the will of the patient, yet the latter cannot control the reflex processes when the volitional path in the cord is interrupted above the lumbar centre."

When the damage to the cord also involves the sensory tract, the claimant may be unconscious of the state of his bladder and the urine will dribble away. Pain in the spine, which is often spoken of by a patient, is no evidence of concussion of the cord, as it is occasionally present in organic disease of the cord, and more frequently in cases of disease of the meninges or bones.

Page regards this pain in the back, so often claimed as a symptom of concussion of the cord, as being due to the strain of the muscles or ligaments of the spinal articulations, and not necessarily indicative of cord injury. Gower says "softening of the cord is common; derangement of its functions few and rare. A severe concussion of

the cord may cause instant and grave damage usually by hæmorrhage, or it may cause no immediate effect and the symptoms appear at the end of a few days and progress rapidly or slowly." It is therefore apparent that in such cases, symptoms of injury to the cord should be found *soon* after the accident and not (as is sometimes claimed by lawyers prosecuting a claim) several months after the occurrence.

Hodges states: "It is characteristic of concussion of the spinal cord, that its phenomena are *immediate* though the recognition of them may not be equally prompt."

The development of an injury from spinal concussion should therefore be specially studied in reference to the *time* after the accident when the claimant first begins to complain. This time should be a few hours or days after the injury, and not weeks subsequently, when his mind, by dwelling on the accident and being posted as to the symptoms of successful awards made in other claims, has induced that emotional, hysterical or decidedly fraudulent condition of the body and mind which constitutes malingering.

POST-MORTEM EXAMINATIONS IN CONCUSSION OF THE SPINE.

The following cases illustrate the pathological conditions noted in well developed concussions of the spine, and prove that such an injury though rare, is possible:

In the *Canadian Medical and Surgical Journal* for Oct., 1884, p. 156, Dr. J. Campbell, of Seaforth, Ontario, states, "That serious and even fatal effects arising from injuries of the spinal cord even when it has not received any direct injury, is proved by a case reported by Dr. Edmunds in the current number (October, 1884) of the journal "*Brain*," where a soldier struck in the back by a bullet which entered three inches from the spine, immediately fell, was carried off the field, and was found to have lost complete control over both of his lower extremities, with paralysis of the bladder and rectum. Cystitis and a bed-sore over the sacrum supervened and he died five months after the injury. The autopsy showed that there was no fracture of the vertebræ; that the theca vertebralis was intact; but the spinal cord was found much atrophied and softened about the level of the wound. On hardening the cord in Müller's fluid, universal myelitis was noted, with softening for about two inches opposite the wound; this gradually passed downwards into sclerosis of the lateral and anterior pyramidal tracts and upwards with sclerosis of the posterior median columns. There was no indication of hæmorrhage, either internally or externally in the substance of the cord, and its surface was uninjured."²¹

A marked illustration of a similar pathological condition showing that degenerative changes in the cord do sometimes, though rarely, follow con-

²⁰ Manual of the Diseases of the Nervous System. By W. R. Gower, M.D. American Edition. Philadelphia. 1888, p. 130 *et supra*.

cussion, has been kindly furnished me by my friend Dr. Arthur V. Meigs, of Philadelphia, one of the Attending Physicians of the Pennsylvania Hospital. As the details of the case, with its microscopical illustrations, have not yet been published by Dr. Meigs, I give his account of it from a letter recently sent me :²²

A sailor, 35 years of age, was admitted into the Surgical Wards of the Pennsylvania Hospital August 20, 1888, and died September 15 of the same year.

History.—During a storm ten days before his admission to the Hospital, he was struck by a wave and dashed against the bulwarks, striking the back of his head and neck against the rail. On being picked up it was at *once* found that he had lost all sensation of power and motion from the clavicles downwards, and that he had retention of urine. When admitted to the Pennsylvania Hospital (ten days after the accident) he had a large bed-sore on his back. His temperature varied from 100° to 103.5°. Examination of his urine showed nothing abnormal, and there was no violence or signs of fracture or luxation of the vertebræ. He was treated on a water-bed; a poultice was applied to his chest because sonorous râles were heard on examination of his lungs, and iodide of potash was administered. The râles increased in his chest until the lungs were full and he became unable to expel the secretion; abdominal tympany supervened and he became comatose, dying apparently of heart failure. The autopsy showed that there was neither luxation nor fracture of the spine, and though the spinal cord was carefully examined at various points by the unaided eye, no sign of its diseased condition was noticed. The cord was then placed in Müller's liquid²³ for hardening and microscopical examination. After having been thus preserved in the fluid for a few weeks, the gross evidences of disease became very manifest and the histological appearances still more so; the lower part of the cervical swelling being almost disintegrated, there being at this point an almost complete transverse myelitis, the greater part of the tissue consisting of the so-called granule-cells with swollen and extended fibres; corpora amylacea and large nucleated cells that stained very red with carmine; whilst there was much space apparently empty, which had been probably filled with albuminoid material or liquid, for if this had not been the case the tissue would have collapsed instead of hardening in Müller's fluid. Above this region there was marked secondary degeneration, the section being taken only a short distance above the myelitis, though this was general in a slight

degree throughout this portion of the cord. But in a part of the posterior columns, it amounted to a complete destruction of the nerve fibres. Below the region of the myelitis there was descending degeneration of the lateral pyramidal tracts, this extending downwards into the lumbar region. These areas of degeneration were very evident to the naked eye after the cord had been in Müller's fluid, the degenerated part of the white substance of the cord having taken a yellow color, exactly similar in shade to that taken by the gray matter, while the portions of the white substance that remained healthy were of a greenish hue." My examination of some of the sections fully confirmed Dr. Meigs' description of the pathological changes.

That diseased molecular changes in the structure of the spinal cord have been occasionally seen without apparent mechanical injury, is shown in the following case, reported²⁴ by Dr. Wm. Hunt, of Philadelphia, "where a gentleman who traveled very frequently in railroad-cars, but never received any injuries as the cause of his disease, began to complain of pain in the posterior root of the neck. Paralysis, at first of the upper and subsequently of the lower extremities, was developed, and within a year he died, and the autopsy revealed spinal meningitis, with softening and destruction of the cord to the extent of 2½ inches in its brachial enlargement. As there was no other cause known, it seems as if 2½ inches of the spinal cord had been softened and atrophied without any mechanical cause;" yet if this man had received even a slight jar and presented such symptoms, his autopsy might have indicated "Concussion of the Spinal Cord." There are some persons who believe it possible to impair the functions of the cord, and even induce paralysis, from the jars created in the spine by constant travel; but if this were true there ought to be very many instances of it found in commercial travellers, none of whom are known to thus suffer. Nor is it true of such men as engine drivers on express trains, who are more exposed to jars on a locomotive than would be the case in a passenger car, and I am assured by an experienced General Superintendent of one of our largest railroads, that engine drivers do *not* show any evidence of concussion of the spinal cord after years of service on express trains. Constant travel as the cause of spinal degeneration is, therefore, not proven.

CONCLUSIONS.

1. Concussion of the spinal cord is no longer a matter of doubt, but may sometime occur as the result of various forms of violence, their being nothing peculiar in the application of the force to the body, as the result of derailment or collision of railroad trains.

²² I am indebted to Dr. Campbell for a written account of this as I did not have access to the printed report in the Journal. The report was made to the Medical Association of Ontario and printed in their Transactions.

²³ M.S. dated April 26, 1889.

²⁴ Müller's liquid consists of 2 to 2.5 parts of potassium bi-chromate, 1 part of sodium sulphate, and 100 parts of water.

²⁵ "System of Medicine," by Pepper. Vol. 5, page 915, Philadelphia, 1886.

2. The pathological changes noted in the molecular structure of the cord as the result of shaking, jarring, or so-called concussion of the cord, when attended by paralytic symptoms, may be due to a hæmorrhagic effusion, or be shown post-mortem, in softening and localized or limited atrophy. In cases due to hæmorrhage, the symptoms may be improved by judicious treatment, and permanent disability prevented.

3. The possibility of preëxisting neurasthenia or hysteria or fraud on the part of a claimant, should be carefully noted in forming a *diagnosis* in these cases.

4. As the question of permanent disability justifying exemplary damages is frequently raised in claims of the kind alluded to, it should be recollected in forming a *prognosis* that numerous cases are reported of recovery or marked improvement in a few weeks, and one in three years even, after the occurrence of paralysis.²³

5. No physician should go into court and swear that a plaintiff has had a concussion of the spinal cord, or of its nerves, unless he has proved the disturbance of the normal functions of the cord, as shown in sensation or motion or both, and that the symptoms appeared *soon* after the injury.

THE MEDICO-LEGAL ASPECT OF CONCUSSION OF THE SPINE.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June 25, 1889.

BY HERBERT JUDD, M.D.,
OF GALESBURG, ILL.

The facts stated in this paper are drawn solely from my own experience as a surgeon—being cases resulting from or suggested to the patient by accidents; cases in which all objective signs of injury, if any ever existed, had passed away; cases in which the question of supposed or alleged concussion of the spine were under observation from a medico-legal aspect; cases in which compensation for personal injury was sought. In bringing this paper to your notice I do so with a feeling somewhat of duty. It is plainly evident to all thinking, practical surgeons that the question of the concussion of the spinal cord, if such a disease can exist, has become a matter of *business* interest—a business transaction in which the extent of the disease or injury is to be determined in the currency of the country. I say this, because of my experience during the last twenty years, I have found but two cases of alleged concussion of the spinal cord, except those resulting

from accidents caused by actual or constructive negligence of others, and where, if an injury existed, there was an opportunity to recover compensation in money. This is the history of all, or nearly all, the reported cases, and, as stated by Erichsen, "the consideration of these cases from a medico-legal point of view is a matter of the greatest importance by reason of the difficulties with which they are surrounded and the obscurity in which they are enveloped."

It is demanded by the honest business interests of the country, by cities, transportation, mining and manufacturing companies and by all employers of laborers, that the subject of spinal concussion receive the most thorough attention at our hands. If we do not expose the cheats and frauds, and protect the deserving claimant, who can do so? That cities and corporations are robbed of vast sums of money yearly by malingerers, aided by unscrupulous legal talent, and by ignorant or dishonest surgeons we all know to be true. This subject has reached this disagreeable status. A person can claim to be injured in a collision of trains, or by other accident, no objective symptoms or signs can be discovered, nor upon close examination found. Nevertheless, such person never fails to find abundant medical testimony, and the assistance of friends which with the required legal talent, will be sufficient to successfully prosecute a suit. Especially is this true when the defendant is a corporation. Such cases can be and are based upon, and carried to the end upon only a few vague subjective symptoms, every one of which depends alone upon the word of the claimant who seeks damages.

I make these statements, not as a partisan, not as a corporation surgeon, but assert them as truths determined by my own personal experiences in cases in which I have been interested as the attending physician from the choice of the patient, in some of which the patient hoped to secure my aid in collecting damages. In some of these cases I have been sorely tried, and, I confess, for a time deceived and misled, in trying to determine whether or not any injury to the spine existed. Some of these patients, where lapse of time had proved conclusively that they had received no injury, had always been considered good neighbors, fair citizens and reasonably honest men. How, then, can we account for such cases? Until the statutes of the various States were enacted, favorable to such claimants, and the laws of fellow servants practically abrogated, symptoms were perhaps seldom deliberately and purposely manufactured, but we all know that patients are apt to greatly exaggerate their complaints. This is no doubt done in many cases unconsciously. In cases of this kind, surgeons and physicians are very liable to be deceived and imposed upon, and made the tools of designing.

²³Injuries to the Spine and Spinal Cord, by Herbert W. Page, F.R.C.S. Second Edition London, 1885, p. 203, who says: "Happily the record of cases which we have been able to collect, is conclusive that recovery is usually very complete and the patient able to resume his occupation and carry on his business as well as he did before being injured."

See also, Dana New York Medical Record, November 21, 1884, page 617.

unscrupulous men, if not well schooled in reading character and determining motives. Definite opinions of imposture in many cases must be non-medical. We may reasonably suspect imposture where there is no organic disease, and where there is obvious motive or money consideration for deception. We might perhaps remain quiet and permit our patients and neighbors to rob corporations on the ground that it does not concern us, just as we take no active part in enforcing the criminal laws of our States for the reason that we are not charged with that duty. But when we find such an increase in imaginary diseases, and find members of our own profession deceived, or deliberately aiding these malingerers, it is time for us to protest as a class. But this is not all. The facility with which damages are collected from corporations is breeding a large class of dishonest persons. It is infectious; men grow more and more to disregard the obligation of an oath. The government itself is a victim; patriotism and sentiment aid. All this tends to demoralize society, and to wrong the honest claimants for damages or for pensions.

Railroad attorneys inform me that it is now their custom to take the names and address of every passenger on a train that has met with any serious accident, because their experience is that at least one-half of the passengers who receive no injury will, before claims are barred by statutes of limitation, bring suit, and claim concussion of the spinal cord. They learn that those who receive trifling injuries recover large sums, and then comes the temptation to extort money, because they ran the same risk as those who were injured, and they quiet their consciences by assuming that although uninjured the railroad company ought to be made to pay for putting them in jeopardy. In some of these cases there may have been trivial injury, and then the conscience of the patient is somewhat relieved and he finds excuse for deception, and the temptation is so great that few seem to have sufficient moral courage to resist. Many a man who had previously had no public stain upon his character has yielded to the great temptation. Can we not do something to save these men from themselves, and to save our professional brethren from temptation, and from becoming the victims of unscrupulous malingerers?

It is no pleasant task for me to bring cases before you, but in doing so I cannot be charged with being partisan, or with having any desire to prevent any honest claimant from securing just and full compensation for all actual injuries sustained through the fault or misconduct of another. Several years ago I withdrew from all connection with the railroad company I had for some years been connected with.

The knowledge I have sought and which I think I have gained in connection with cases of

alleged concussion of the spinal cord and other cases of malingering, forbids me from remaining silent, especially when I see that the tendency of such pretended injuries or disease is to lower the standard of the medical profession, and to cause the people who see the results of these cases after the money consideration has been paid, to lose faith in the honesty and integrity, or in the skill and knowledge of physicians. I append statements of a few cases that have come under my observations; cases followed by me carefully after judgments were paid or claims settled, and in which recovery was complete in a surprisingly short space of time, without the aid of surgeons or physicians. Such cases have of recent years become so common that the medical profession is brought into ridicule, and it is not rare that intelligent men of a community assail us with the jocular information that railroad officials with no knowledge of medicine or surgery, succeed in producing speedy and permanent cures with money, where our skill and care produced no improvement in the patient.

It is said, and it is probably true, that more people are injured every year by riding in carriages and by farm work than by railroads. Yet injuries that are pure accidents, or injuries where a corporation of some character is not at fault, never result in concussion of the spinal cord. And where injuries occur through accident, for which no liability can attach, we find no malingerers.

Cases 1 and 2.—May 10, 1889, I was called to see Mr. and Mrs. C. G., aged respectively 62 and 63 years. They had been riding in a spring wagon; the horses were frightened by cars and ran away, throwing the occupants out. There were no visible wounds or fractures, but the patients were suffering from shock. I surrounded them with blankets and jugs of hot water, and after four hours of rest, sent them to their home five miles distant. These people were disciples of Hahnemann, and the next day sent for their family physician, and in a short time concussion of the spine was alleged in both cases. Damages were paid. The man is still living and in average health for one of so great an age. The woman was alive and in good health three years ago.

Case 3.—E. H. H. was walking on a sidewalk and fell into a pit eighteen inches deep, extending from a basement window. I saw him a few days afterwards. His thumb was swollen, and that was the sole objective symptom. The patient at once talked of the amount of damages he could recover, and complained of his back. This man was a hanger-on about the courts, and had some ideas as to how to proceed, and his subjective symptoms were in the line of his desire to recover a judgment. This case was properly attended by a skilled surgeon and physician, a man who stood

above reproach. Through his care and *warning* the spine recovered, although the patient's friends asserted positively that he suffered severely from concussion of the spinal cord, and other alleged doctors were called to examine the patient. The physician in charge became disgusted with the malingering and abandoned the case, and through fear of his testimony, no doubt, the concussion theory was abandoned, and the thumb grew worse. The thumb and hand were firmly bandaged, until there appeared to be permanent contraction and disfigurement. Suit was brought against the city, and good legal talent was employed, for lawyers as well as doctors can be found to work in such cases for a consideration. The city was mulcted several thousand dollars, although competent and reputable physicians testified that the sprained thumb would have recovered in a short time without treatment, if it had been left alone and not bound and poulticed. Within one month after the judgment was paid, the man, to the disgust of his friends, was at work on his bench as any shoemaker should be, and the recovery was complete. This case would have gone through the courts as an aristocratic case of concussion, instead of a plebian case of a sore thumb, had not the honorable physician who first attended the case stood in the way.

Case 4.—Concussion of the spine—so-called and treated by two reputable surgeons. Liability conceded by a railroad company. Damages estimated on the basis of permanent injury and the presumption that the man could never walk again. A complete book case. A large sum of money was paid, and a few days thereafter the man *walked* to the cars in the night time and left the State. The case was as follows: The claimant was an engineer. In making a rapid switch a rail was broken, and the engine left the track and tipped over. The fireman was killed and the engineer thrown out and stunned and bruised. His family physician was called, and he in turn called a surgeon, who justly ranks high. There were no objective symptoms. The man was apparently scared. There had been no shock. The case gradually grew to be a case of concussion of the spine, a "book case." In justice to my esteemed medical brothers who attended the case, I will say, that under the circumstances, and with death resulting to the companion of the patient, other surgeons would have been likely at that date to have been deceived. I rejoice at my escape from this case, for I sadly fear that with the experience I then had I should have believed the patient's statement and symptoms related. The recovery in this case was complete, and the man last heard from, some five years after the accident, was in robust health.

Case 5.—F. P., age 18, brakeman, habits questionable, health undermined, inclined to consumption, was on top of box car in a train under

way. Head end collision. P. jumped from train and fell some distance from the track; when found he lay in a depression in the ground on his back, with his back across a railroad tie. He was brought a distance of 23 miles to his home. He was met at the station on his arrival by the writer, four hours after the accident, and was carried home on a hand stretcher. When met at the station reaction was progressing naturally. He had received a great shock. Two hours after seeing the patient at the station, I again saw him, and being the attending physician of his father's family, and the residence being a short distance from my office, I saw him often. In this I made a mistake. There were no objective symptoms. The subjective symptoms were pain in the back over the dorsal vertebra. My directions in the first instance were to keep him warm and let him alone until I again called. The pain being apparently so great, I called to my assistance a very painstaking physician. We carefully examined the patient and found curvature of the spine, bold and distinct. We abandoned further examination at that time and regarded the case as hopeless. To our great surprise, however, during a later visit the same day we found reaction fully established, with no complaint of pain. We then again examined the back. The deformity of the spine was decidedly marked, but there was no tenderness upon pressure. We made no further examination for several days, and in the meantime I described to his mother the condition of the spine as we had observed it, and our fears of a serious injury and fatal result. This was my second mistake in this case. The information I communicated to the mother, to my surprise, did not greatly disturb her, and here my suspicions were aroused. I had long been her attending physician, and the patient was her son, and yet my opinion of her son's condition was received quite calmly. From this time on the curvature of the spine became in the minds of the family more pronounced, and the money question began to be considered. To protect myself and guard against an outrage being committed, and for the purpose of saving the reputation of the family I had so long attended, I procured skilled help and made a correct plaster cast of the whole back. I had seen lawyer's tracks. Secret meetings had been held in the back parlor, as was reported to me. I was quietly interviewed and informed that the case was all clear if I was all right. The whole family asserted to me that prior to the accident no deformity of the back had existed. I was in trouble, and consulted with the physician whom I had called in consultation, and we took such steps as we could to save ourselves from being either parties to a contemplated robbery, or from wronging the family that had trusted me. A brother of the patient, a bright boy, had some years before been my office boy. He was absent

from home at the time of the accident. When he returned he told me that his brother's back had been that way since he was a little fellow.

I devoted my labors after this to getting my patient out of bed and on to his feet, but he insisted upon the necessity of crutches. I could do no more; the spine grew worse; suit was brought because a fair and, in truth, a generous offer made by the railroad company was indignantly rejected. Foreign surgeons were called to examine the patient preparatory to testifying. I knew the case was one of malingering, and so informed the attorney of the railroad company. The surgeons who had no knowledge of the case, except as related to them by the patient and family, would readily have testified to the permanent injury and that the accident was the cause. When the case was set for trial I was so beset with difficulties that I was compelled to exhibit the cast of the back, and to urge that surgeons for the railroad company might make an examination. This was done. It is sufficient to say that Dr. J. Adams Allen cured the case within the half hour before Court convened. So thorough was the cure that a reasonable sum for the actual injury, less than the amount previously offered, was greedily accepted. On the evening of the same day the crutches were abandoned, and the afflicted spine was supporting the body of an intoxicated man.

This, gentlemen, is a true history of a case that occurred in a family that had my confidence and respect. It cost me many gray hairs.

Case 6.—A middle-aged man of nervous temperament, of health feeble for years, tripped and fell from a defective sidewalk. Accident happened in front of his own house. He immediately took to his bed. A reputable physician of long experience in general practice was called. The patient remained in bed—as was supposed—for some months, when suit against the City was brought, based upon permanent injury to the back, on account of spinal concussion. The case was on trial with the plaintiff in bed, unable to attend, as was alleged, when the writer and another physician were solicited by the plaintiff's attorney, who had faith in the honesty of the case, in order to further the ends of justice, to go and examine the plaintiff, and testify to his crippled condition. We found the man in bed, and evidently prepared for our coming. Not the slightest objective symptom could be found, but the subjective symptoms were perfectly in accord with all the recorded book cases. With careful effort we got the man out of bed. The imperfect walk, the peculiarity of gait and carriage of body, were just what a student would expect to find after having freshly read these cases and never before having seen one.

I am not naturally suspicious. I want to have faith in mankind, I want to be just, but there were many things which I cannot fully explain; the manner of the man, his guarded language, his

suspicious glances, that caused me to suspect that we were being misled, and being entangled in the trap set by designing lawyers, or credulous and ignorant physicians. I informed the plaintiff's attorney of my suspicion, which after some tests had become a conviction, of the plaintiff's dishonesty in this case. I was nevertheless called to testify, because, as I was informed, my silence after it was known that I had made the examination, would be more damaging than my negative testimony. I testified substantially that I had no positive means of knowing or satisfying any one else that the man was simulating all his symptoms, that I had never before had cause to suspect him of dishonest practices, that there were no objective symptoms or signs of injury, that the whole case depended upon the symptoms which could be simulated, and upon the statements of the patient, and upon these alone. I was asked by the attorney for the City to answer that had the accident happened within his own dooryard, or where no one would have been liable, would the symptoms have been the same? I answered, "No, I certainly think not." This testimony was, however, "ruled out" by the Court. The surgeon who made the examination with me corroborated my opinion. I did not hear the testimony of the attending physician, but was informed that he thought it improbable that all the symptoms could be manufactured; that in all such cases the physician had to rely upon the statements of the patient, and that he could not be properly treated if symptoms stated were ignored, etc. Judgment was given in favor of the cripple, and the money paid. A few weeks afterwards I was much surprised—or would have been had I believed the man's story—to see this same plaintiff riding about the city; and about five months after the trial I ought to have been again surprised beyond belief, I suppose, to see this same man, permanently crippled from concussion of the spine, put a heavy stove into a lumber wagon. To be certain that I was not mistaken in the person I went to him and shook hands with him. He is not now a strong man, and was not before his fall on the sidewalk, but, knowing him well both before and after the fall, I can state positively that he is in better health and in better physical condition than before the accident. It is certainly very unpleasant for me to record this case. I have no personal ill will against the man. He was the victim of his cupidity, and only followed the precedent set by many other "honorable men." I was recently called to his fireside to treat a member of his family.

Case 7.—A young married man, jeweler by trade, had occasion to go hurriedly to a railroad station. Unknown to this man, as he claimed, the station platform had been partially removed for repairs. The sidewalk, which was in place, had formerly terminated in the platform. The

removal of the platform left the end of the sidewalk about 14 inches above the level ground. The man stepped off the end of the walk, and fell to the ground. This is the history of the accident given by the patient—no one else witnessed it. He got up, went into the telegraph office, sent a message and returned home. The case was brought to my knowledge some weeks afterwards by the attorney of the railroad company, who desired me to examine the man together with the doctor in charge. At my suggestion, permission was granted by the attorney for the claimant to call a third physician. I called Dr. H., an old practitioner, and a man beyond reproach professionally and otherwise. I found the history of the case as stated above, and that permanent injury was claimed; that suit had been brought in one County and that the attorney who brought the suit had abandoned the case because he believed the man dishonest in his pretenses of injury. This put us on the watch and compelled a critical examination. The desertion of one attorney did not deter the claimant, nor seriously discourage him. Lawyers are no more virtuous than physicians, and a speculative lawyer was soon found ready to take the case, and a new suit was brought in another County. The physician who had been treating the case was employed specially because of a reputation he had previously acquired as an expert witness for the claimants in spinal concussion suits. The attorneys representing both plaintiff and defendant were present. This was a mistake, and was chargeable to me. No proper or satisfactory examination could be made under the circumstances. The case presented in all its aspects the appearance of chronic disease, or permanent injury; the general appearance of the patient was bad, suggesting rheumatism. Aside from this there were no objective symptoms. I stated that if his present condition was due to the fall, he was certainly injured. He finally admitted, because it was susceptible of proof, that he had repeatedly suffered from rheumatism for some years. It did not seem possible to Dr. H. and myself that this person could be in his present condition from any injury a person could sustain from the accident related. The doctor in charge of the patient and his claim stated that it was a case of permanent injury to the back. The case came to trial, concussion of the spinal cord was the plea. It was shown by his own testimony how much he had suffered and was suffering. The doctor in charge either dishonestly or ignorantly corroborated his patient, although admitting that no medicine had been used. Some of the most candid and intelligent surgeons of the State of Illinois, all members of this Association, were called by the railroad company as witnesses. The track gone over in this case was the same old beaten path, the only road possible to travel, that is the man's own word and

subjective symptoms. Book cases were rehearsed to the jury of concussion of the spinal cord by a professor of the Physio-Medical College—formerly of Cincinnati—the pale face of the rheumatic patient, the prejudice of a jury in favor of a claimant and against a corporation, succeeded, and damages were awarded to a large sum. After payment of the judgment, the patient recovered from all trouble, except rheumatism, so rapidly as to abash and disgust the innocent jurors and sympathizing friends, and finally taunts and charges of dishonesty became so numerous that the claimant felt it safer to emigrate from the County, and the doctor, who was also a druggist, has removed, but before going, instead of pleading ignorance to the discredit of his skill as a physician, admitted that it was a little scheme to get even with a soulless corporation. The claimant had not sustained the slightest injury; indeed, it is believed by the citizens of the village that he did not even fall from the sidewalk.

I will not burden you with reference to any further cases. It would be but a repetition. You have no doubt had similar cases. I have been unfortunate, it may be, in having a number of other cases brought to my knowledge, a number in excess of what might seem usual; but I have no doubt no greater number or kind, as regards the subject of concussion of the spinal cord considered in its medico-legal aspect, than have come under the observation, in the practice of a large number of those present.

If a young man can begin life with the truth visibly laid before him, and be warned of the snares set for him, and be helped to avoid deception, some of the obstacles to his honorable fame may be removed, and his path be made easier. If the young men in the profession could realize that cheats and frauds are not rare, much good might be accomplished and less harm done.

I must certainly question if there be such a disorder or injury as concussion of the spinal cord, as some of the books tell us, or describe it. I have certainly been a hard worker after the truth in this matter, and have not exaggerated the cases I have reported, and have withheld reports of other now notorious cases of pure fraud and malingering, in which honest but credulous physicians were misled, deceived, and their reputations injured.

I trust that members of the profession more skilled with the pen than I am, more capable of expressing their ideas to others, will give the subject careful study, and give their views to the public. To learn the truth these cases must be followed and observed, not only before judgments are paid, but for months afterwards. I would be happier if I could be convinced or could convince myself that I have been mistaken in all these cases, and that the remarkable cures effected apparently by juries, were really cures effected by

the kindness of Divine Providence, or by the labors of Christian Scientists.

If in my awkward way, and by my crude language I shall succeed in creating enough interest to cause others to be on their guard and to study this class of cases when damage suits are brought, I shall be content.

DISCUSSION.

DR. WM. BRODIE, of Detroit, Mich., cited two cases, in one of which his testimony was for the plaintiff; in the other, against. The jury gave the plaintiff heavy damages in both cases. Conclusions: Immediately after a man is hurt the railroad surgeon should advise the company to settle, for if injury of spinal cord has occurred the patient will continue to give evidence of his injury; and if not, the damages received from the company will prove immediate cure, and thus demonstrate that no injury had taken place. Juries cannot be made to see the difference. It is only necessary that the defence be a rich corporation. He also cited a case at Cobourg, Ontario, wherein the G. T. R. W. was defendant. The injured man recovered in less than ten days after the verdict in his favor and was married. Has been in perfect health since, although he played paralyzed for near two years, with loss of sensation in his extremities. Such perfect control did he have that neither needles nor electricity could make any observable impression upon him when applied even without his direct knowledge. Of course he was aware that he was being put to some test, and his will controlled.

DR. B. A. WATSON, of Jersey City, N. J.: Spinal concussions are not so frequent as would seem from court decisions. I have observed as the most frequent injuries following railroad accidents: 1. Hæmorrhagic infarction in lungs. 2. Lacerations of liver, spleen, lungs, or kidneys. 3. Rupture of blood vessels and bladder.

DR. CHARLES B. PENROSE, of Philadelphia, said: I think that we are all in accord with the principles expressed in the papers which we have heard to-day, and we protest against the robbery of corporations and the consequent discredit brought on our profession by supposed victims of spinal concussion.

The rarity of any serious injury to the spinal cord, unaccompanied by injury to, or lesion of, the surrounding bony or ligamentous structures, is shown by the records of large surgical hospitals, where simple spinal concussion analogous to transient cerebral concussion is exceedingly rare, if not altogether unknown.

In the Pennsylvania Hospital, where there are treated yearly about 700 cases of fracture, luxation, sprain and contusion of sufficient gravity to demand in-door hospital treatment, simple spinal concussion is one of the rarest conditions met with. And yet these injuries are produced by

falls, blows and collisions, which must cause more or less jarring of the whole body, besides the local fracture or contusion, or sprain for which the patient is admitted.

I am familiar with the details, and have examined the specimens of the very interesting case of spinal concussion referred to by Prof. Smith, as that of a sailor admitted to the Pennsylvania Hospital, who had been thrown violently upon the nape of his neck. The autopsy was made most carefully with the special object in view of determining the existence of any injury to the bones or ligaments of the spinal column, as in such cases there is always a probability that an unrecognized fracture is present, or that dislocation has taken place and been immediately reduced, so that no deformity is afterwards apparent. But in this man no fracture of bone or laceration of ligaments was found. Nor does it appear, from the nature of the accident, that any sharp flexure had occurred and produced undue tension upon the cord; nor was there any indication of hæmorrhage from the vessels of the cord or of the membranes. It seems, therefore, to be a simple case of injury or concussion and subsequent degeneration of the cord, produced by direct violence without any fracture or laceration of the surrounding structures.

Women at the menopause are frequent malingerers of spinal concussion, or spinal shock, and their nervous symptoms sometimes really deceive themselves and friends, being falsely attributed to some more or less severe injury coincident with the real physiological cause of their trouble.

I have examined two such cases, where, in court, trifling injuries were affirmed to have caused spinal concussion, and were held responsible for all the hystero-neuroses of the menopause. In one case the plaintiff was non-suited, in the other a compromise was effected. In both women all symptoms of spinal concussion probably disappeared as soon as the menopause was over.

An important point which Prof. Smith has mentioned, is the impossibility of giving a certain prognosis with regard to permanent disability after spinal injury.

An exceedingly interesting case, where recovery of muscular power occurred after prolonged paralysis from a very severe spinal injury and probable fracture, came under my observation about two years ago. The man had been a soldier, and in the battle of Cross-Keys had been struck by a bullet on the cartridge belt and had fallen backward from a height, upon the buttocks. He was not wounded by the bullet; but his back was so injured by the fall that he was immediately paralyzed and he was obliged to lay for three years on a water-bed, with paralysis of the legs and incontinence of urine and feces.

He afterwards regained muscular power suffi-

ciently to lead the laborious life of a peddler, tramping, with his pack for twenty years subsequently, through Pennsylvania and New York. The only mark of injury now apparent is a slight prominence of the lower dorsal vertebra. He has never recovered control over the bladder and rectum, or sensation in the skin of the buttocks on the posterior aspect of the thighs.

DR. J. H. MURPHY, of St. Paul, Minn., said: Erichsen has cost the railroads thousands of dollars. He cited several cases of malingering.

DR. WM. H. PANCOAST, of Philadelphia, said: The question under discussion has two heads. First, is there such an injury as concussion of the spine, and are there malingerers who assume the symptoms. That there can be cases of concussion of the spine followed by serious consequences, I firmly believe, for I have seen them. I have seen cases where a violent concussion in a railway accident has so affected the contents of the spinal canal as to cause effusions, or such alterations of the membranes of the cord or of the cord itself, as to be followed by paralysis more or less complete. Many members of this Section of Surgery and Anatomy must, in the course of their lives, from mis-steps or other accidents, have recognized the force and painful effects of concussion. I have within the past few weeks been engaged in a medico-legal case, where a delicate lady, the wife of a physician engaged in a large and active practice, was thrown from a carriage in which they were both driving. A careless coachman driving a heavier carriage ran into them, and the collision threw her to the ground and against a wheel, with such violence that she became insensible. She has remained an invalid ever since, with marked symptoms of paralysis on one side. In neither of these cases was there hysteria or malingering.

There are malingerers, and we must be on our guard against them, and I have such faith in the honor of the members of our regular profession as a class, that I do not believe they would be parties to such a deception. I have been called as an expert in several such cases, and have sometimes settled the medico-legal questions in my office to the satisfaction of both sides. I feel assured that this learned body recognizes the existence of such an injury as concussion of the spine, and also that while the great railroads who do so much for the benefit of the country, should be protected from suits inspired by fraud and ignorance, that the great public should also have protection. I think that if corporations would give fair compensation for injuries received at their hands, through accident or the carelessness of their employes, and not insist that such injury should be proved to be permanent, that a cause exciting to fraud or malingering will be removed.

I give credit to the corporation surgeons of de-

siring to be honest, and giving a truthful scientific diagnosis from their standpoint; then why should not we also recognize the statements of the surgeon of the injured, as being inspired by the same motive, even if some one may occasionally be deceived by an ingenious and artful malingerer.

From my experience I think that very many railway injuries can be satisfactory adjudicated and the sufferers properly compensated by the judicious surgeon acting as mediator between the opposing lawyers, to the honorable satisfaction of both parties.

TWO CASES OF TUBERCULAR OSTEO-MYELITIS OF TIBIA.

Read before the North Texas Medical Association, June 12, 1889.

BY J. T. JELKS, M.D.,
OF HOT SPRINGS, ARK.

PROFESSOR OF SURGICAL DISEASES OF GENITO-URINARY ORGANS
IN COLLEGE OF PHYSICIANS AND SURGEONS,
CHICAGO, ILL.

Case 1.—In the Spring of 1888, Mr. —, æt. 40, consulted me for great and constant pain in the left tibia. I found him in a hovel, poorly ventilated, poorly warmed, and poorly lighted. The odor in the room was simply unbearable, but with burning tar in the room I examined the patient as best I could. Found him greatly emaciated, with large ulcer on left leg, several inches in length, with the presence of pieces of dead bone. He was being cared for by some of the charitable ladies of the place and consented to an operation. Assisted by Drs. Thompson and Gebhart, I proceeded to operate. After the anæsthetic was given I washed and scrubbed his leg with soap and water, then with solution of bichloride of mercury, 1:1000; wrapped his feet with towels wrung out of the bichloride solution, and also covered his body with antiseptic towels. An Esmarch bandage was applied above the knee-joint—about 6 inches—to make a bloodless operation. I then proceeded to cut down to the tibia, making an incision from near the insertion of the tendon of the patella to within a few inches of the ankle-joint. Peeled the periosteum back on both sides of the line of the incision, and then with mallet and chisels I proceeded to remove the anterior surface of the bone, finding the focus of the disease not far from the head of the tibia. I continued the use of the chisels and mallet until I thought all the abnormal material was removed, and when through I had a trough six inches or more long, half inch wide and half inch deep in some places. It was now scraped out with the sharp spoon of Simon, irrigated with solution of sublimate 1:1000. Again irrigated with solution of sublimate 1:500, and when this was through with a quantity of 1:5000 solution was used to wash out the stronger liquid. The operation by being bloodless was

made more thorough, because I could inspect every crevice and corner of the large trough.

A Schede's dressing was applied—that is, the cavity was sprinkled with powdered iodoform, the skin stitched together where it would meet, and over the line of incision a strip of antiseptic oiled silk was placed, overlapping the incision one inch on each side and about the same at each end; over this was placed a strip of iodoform gauze, then a thick layer of sublimated cotton, and over that several layers of sublimated bandage, tightly applied; over all a protective of oiled silk, previously soaked in sublimate solution. When all this was done the constrictor was loosened, and the cavity I had made allowed to fill with pure blood, the leg being held as near vertical as we could get it. He had no fever from the operation. The leg was dressed in one week and found almost healed by the organization of the blood clot. In six weeks he was well and upon the streets.

Case 2.—Mrs. H., æt 30, widow, consulted me for enlargement of left leg, with two ulcers near the upper extremity of tibia. Constant pain in leg, so much so that she had resorted to frequent use of morphia to relieve it. One of the ulcers opened down on the tibia. I proposed opening the bone and turning out the diseased mass. She consented, and I asked Drs. Haffner and Thompson to assist me in the work. After the use of the antiseptic precautions detailed in Case No. 1, I proceeded to cut down on the tibia in the middle line, turning back the periosteum on each side of the line of incision. This was not very readily done at the upper part of the wound, a previous operation, similar to the one I was doing, having been performed on her in Detroit, Mich. This operation was rendered bloodless by the use of a constrictor about the middle of the thigh, and hence in the use of the chisels I could follow the diseased tissue wherever it went. I chiseled away until I had a trough of the tibia leaving its sides and bottom. This was well curetted with a sharp spoon to remove any shreds of diseased material left, its entire removal being absolutely essential to success. This was rendered aseptic by use of sublimate solution 1-500, and then 1-1000; finally it was irrigated by solution 1-5000, and a Schede's dressing applied. Constrictor was now removed and leg suspended in upright position until the blood clot could form, when it was let down on the bed. Few hours afterwards blood was noticed oozing from the bandage near the ankle-joint. A rubber bandage was tightly applied for two or three hours and then removed. When the hæmorrhage had ceased the wet spots on the bandage were sprinkled with iodoform, and a fresh antiseptic roller bandage applied.

This dressing was taken off at end of ten days, and not a drop of pus was found, but the upper

third of the cavity in the tibia was empty, lower two-thirds filled with well organized clot, skin united over it so that the line of union was scarcely perceptible. The bandage was not applied tightly enough to prevent the loss of part of the blood clot, hence the empty third at the upper part of the wound. I tried to persuade her to let me fill this cavity with blood from her arm but she would not consent. About once in seven or ten days this cavity was filled with iodoform gauze, and it granulated until healing took place requiring three months. Had not the blood clot been lost the entire cavity would have been healed in a few weeks.

When another opportunity offers to make this operation I shall utilize the decalcified bone chips of Senn—that is, I'll fill the cavity with these chips and allow the blood to cement them together, using the Schede's dressing as above described.

Tuberculosis of bone is a subject that has not been understood until the last few years. Formerly, caries, necrosis, and tumor albus were the diseases we had to contend with, when the bones were involved. Thanks to the labors of Koch, Volkmann, and others we now know that what we formerly regarded as diseases are but the results of disease. Dropsy was once a terrible disease, and is so regarded to day by the laity and some of the profession. We know it only as a symptom. So with caries, necrosis, and tumor albus. They are but the results of inflammation of the bone, or rather of the bony envelope—the periosteum, endosteum, or medullary matter. Practically, inflammation of bone means inflammation of these substances; they are practically one. The bony material itself is not inflamed, but the endosteum, or periosteum, swelling, the resulting pressure cuts off the blood supply of the bone, and caries or necrosis is a result.

The causes of bone inflammation may be set down as trauma, cold, and fever. Upon this trauma we have engrafted an infection with the microbes of pus, tuberculosis, syphilis, rheumatism, or gout. The pus microbes, the staphylococcus aureus or albus, or the streptococcus pyogenes, are very vigorous and active and produce a very violent inflammation; whereas the bacillus tuberculosis is a slow growing coccus—it is not a pus producing coccus—and hence its effects are slower in manifesting themselves, and when only the bacillus tuberculosis is present in a joint or bone, only granulation tissue is formed. It may be said also that the bacillus of syphilis and rheumatism are not pus producing bacilli, and that their effects are slower in manifestation, and hence chronic. It follows that the acute bone inflammations are produced by the pus microbes, and the chronic inflammations by either the bacillus of tuberculosis, rheumatism, or syph-

ilis. Ninety-two per cent. of these inflammations of bone are so produced, leaving 8 per cent. for the pus microbes. Volkmann, the greatest living authority on tuberculosis, says that 90 per cent. of the cases of caries are tubercular in their origin. When the trauma is slight the resulting bone inflammation is tubercular; when the injury is severe the inflammation following it is produced by the pus microbes. If the skin is not broken whence comes the microbes? We may say that they are floating in the blood current at all times, and, thanks to the leucocytes are being constantly destroyed, but when an injury results the effusion of leucocytes outside of the blood vessels renders them inactive, and a fine culture fluid is produced in which these microbes of disease have an opportunity to develop. If the injury is slight the inflammation resulting is tubercular or rheumatic; if severe, the pus microbes take possession of the field.

MEDICAL PROGRESS.

ON INJECTIONS OF TESTICULAR LIQUID.—In the Société de Biologie de Paris M. Variot reported three experiments which had been made to ascertain the physiological action of fresh testicular liquid injected subcutaneously, after the manner of Brown-Séguard. The liquid used was obtained by crushing and triturating the testicles of a rabbit or of a guinea-pig in 10 cubic centimetres of distilled water. After separating this liquid from the residual pulp by simple decantation two Pravaz syringes of it were injected under the skin of the abdomen at a dose, the injections being repeated every forty-eight hours.

Variot operated on three men, of 25, 56, and 68 years, respectively, who were much debilitated from various causes. The effects produced in these three cases were satisfactory from the first, and continued so after subsequent injections. Sixteen injections were made in all. No harmful symptoms requiring any attention were noticed. The injections proved painful but harmless. The pain following the injection is considerable for several hours, it is even accompanied by a general feeling of uneasiness, but not by fever. The first injections are especially painful, the subsequent ones much less so. The positive effects (which were the same in the three men, the nature of the substance injected not being known to them) were as follows: a general state of nervous excitement, an increase of muscular strength, regulation of the functions of the digestive channel, and some cerebral excitement. An increase of virility was found in two of the three cases.

Variot is unable to answer the question: whether these phenomena were an effect suggested merely by the operation, or whether they were

actually due to the action of the liquid, as claimed by Brown-Séguard. The number of experiments is as yet too small.

Brown-Séguard claims that the conditions under which Variot made the experiments prove that there was no imaginary effect in these cases, but that the liquid really possesses the properties that he ascribes to it.

Brown-Séguard also made experiments with liquid obtained from other glands, and proved that a liquid obtained by trituration of the lungs contained a toxic substance. Liquids obtained from trituration of the liver and spleen had no effect whatever upon the animals treated with them.—*La Semaine Médicale*, No. 27, 1889.

ON THE ETIOLOGY OF PERICARDITIS.—In the bacteriological examination of three cases of pericarditis G. BANTI (*Deutsche Medicinische Wochenschrift*, No. 44, 1888) found, in the first case, no microorganisms at all in the fibrinous exudate, for which reason he considered that an example of non-infectious pericarditis. It was the case of a man 48 years old who had been suffering for years from a chronic nephritis, and had died during an attack of uræmia, symptoms of pericarditis having appeared a week before death. The author thinks that here pericarditis was ascribable to the kidney disease, and that its cause might be of a chemical character, or might be looked for in the uræmic attack, as it is known that acute inflammations are often complications of acute uræmic attacks.

Two other cases of pericarditis belonged to the group of infectious pericarditis and developed in consequence of fibrinous pneumonia. In the first of these cases the diplococcus pneumoniae was found in the pericarditic exudate, as expression of a secondary localization of the latter; in the second case the pericarditis appeared as a mixed infection caused by the staphylococcus aureus and albus. In this latter case the inflammation probably spread directly from the pleura to the pericardium, as there existed at the same time an extensive pleuritis, and the staphylococci were also found in the pleural exudate.

Regarding the first case the author supposes that the pericarditis was of hæmatogenous origin, and to prove this he tried to produce, with the diplococcus pneumoniae, pericarditis in animals. For this purpose he created an artificial pericarditis by injecting oil of turpentine into the pericardium, or by cauterizing the latter, and then injected pneumococci under the skin. Numerous capsulated cocci were subsequently found in the pericarditic exudate thus obtained. This pericarditis was most easily produced if from twenty-four to forty-eight hours were allowed to elapse between the injury to the pericardium and the injection of the pneumococci, in which case always an isolated inflammation of the pericardium

was found which did not extend to the pleura, the peritoneum or the mediastinum.

These experiments show that a hæmatogenous pericarditis may be produced in animals by means of the diplococcus pneumoniae.—*Centralblatt für Klinische Medizin*, No. 20, 1889.

ON PULSATING PLEURISY.—MILLARD communicates the case of a man, 36 years of age, who was taken, in May, 1887, with pleurisy of the left side, which soon became complicated with pneumothorax. Nevertheless he improved, and could resume his occupation, until, in December, 1887, after a run, he was attacked by a sudden dyspnœa, with evident return of the symptoms of pneumothorax. In July, 1888, a tumor appeared on his back, to the left of the spinal column, on a level with the last ribs, which grew rapidly and soon pulsated synchronously with the heart. August 10 an incision was made into the thorax and $3\frac{1}{2}$ litres of pus were extracted. The tumor fell and the pulsations ceased immediately. From August 28th to September 22d, during Millard's absence, five more incisions were made, and from 1,300 to 1,500 gr. of pus extracted each time, each operation being followed by the injection of a dose (which was then gradually increased from 80 to 115 gr.) of tincture of iodine. These operations were well borne. November 6th a puncture was made, with successful results, but the next morning all the symptoms of pneumothorax had reappeared. Then Dr. Peyrot performed pleurotomy. The ninth rib was resected for 3 centimetres, and again about 3 litres of pus were removed; rinsings with iodized and alcoholized water were made repeatedly, as often as four times a day, but hectic fever and diarrhœa continued, and November 27th the patient died. An autopsy was not made. Millard thinks that Fériol will be inclined to cite this case in support of his theory, inasmuch as the patient, before showing the symptoms of pulsating empyema, had had pneumothorax twice; he (Millard) is of the opinion, however, that experiments will be necessary to arrive at a true explanation of pulsating pleurisy.—*La Semaine Médicale*, No. 27, 1889.

TREATMENT OF DIABETES.—In an article by ALBERT ROBIN on this subject the following points are discussed: 1. The modifications which the laws of exchange undergo in diseases, explain the pathogeny of the latter and become the source of certain therapeutic indications. The knowledge of the effects upon normal exchanges produced by a drug renders it possible to foresee its real therapeutical application. There is reason for a revision, from this double standpoint, of the physiology of disease and of that of drugs. This revision made, the science of therapeutics will enter upon a new era; it might then reclaim the

epithet "rational" and repudiate forever the fumbling of the past.

2. Biological chemistry shows that there exists in diabetic patients an exaggeration of all the acts of general nutrition, and also an increase of activity in certain special organs, especially in the liver and the nervous system. The undeniable fact of overactivity of the general nutrition and of the hepatic cells influenced by a direct or reflex nervous irritation, should be the starting point for the therapeutics of diabetes. It may be affirmed in advance that every drug which slackens, in whatever manner it may be, the general changes and that of the nervous system, will diminish immediately the glycosuria. But a drug will only have a beneficial effect in diabetes if it retards the general excitation through the intermediation of its primitive action upon the nervous system, and if it does not exert too energetic a suspending influence upon the functions of this system. Therapeutic substances which accelerate denutrition should be done away with. It has been shown, clinically and experimentally, that they have produced no favorable results whatever.

3. The therapeutical indications in diabetes may consequently be formulated as follows: *a.* Withdraw from the organism, by a proper diet, the materials assisting in the formation of sugar, and free the hepatic cell from the agent irritating its functions. *b.* Slacken the general dis-assimilation and the formation of glycogen by the aid of therapeutic means which diminish the clinical actions of organic life through the intermediation of their primitive action upon the nervous system.—*Gazette Médicale de Paris*, Vol. vi, No. 26, 1889.

ON SCIATIC NEURITIS IN THOSE WITH VARICOSE VEINS.—Numerous observations attracted the attention of QUÉNU to the seemingly not rare coincidence of varices with a neuralgia appearing in the clinical form of a typical ischias. The symptoms in question are not the troubles complained of by most persons afflicted with varix, heaviness, sleeping of the lower extremities, cramps in the calves, etc., but neuralgic pains in the whole length of the nervous ischiadicus, which may be produced also by pressure upon the well-known points. Of 61 patients afflicted with varix, 6 consulted Quénu not on account of the latter, but for the neuralgia; in 31 out of 56 other cases in which the patients did not complain of spontaneous pains, pressure upon certain points of the sciatic produced them. The neuralgias were not very acute and did not manifest themselves in the form of attacks, but existed continuously in a moderate degree, and were felt especially after a walk or after standing for a long time. In the anatomical examination of the nerves Quénu repeatedly found varices in the veins of the sciatic, but he thinks that the pains were caused by a genuine neuritis, originating from a

phlebitis, not by the pressure of the varices upon the nerve-fibres. This neuritis gradually spreads from below upward, from the nervous tibialis post to the nervous popliteus, and to the sciatic. A disturbance of the peripheral nervous system caused by the obstruction of the circulation in the veins might give rise to trophic troubles in the skin, from simple erythema to varicose ulcers. Every patient suffering from ischias should, therefore, be examined for deep varices. If such are found a well-applied elastic bandage will often relieve pain more effectively than all other means.—*Centralblatt für Chirurgie*, No. 26, 1889.

EXAMINATION OF THE BLOOD FOR THE EXISTENCE OF TYPHUS-BACILLI AS A DIAGNOSTIC MEANS.—DR. JANOWSKI, of Kiew, did not succeed in proving the existence of typhus-bacilli in even a single one of the blood-samples taken from patients in whom abdominal typhus has been diagnosed with certainty. This fact, as also the results of the experiments of other investigators convince us that the probability of discovering typhus-bacilli in blood taken from the skin of a finger, of a roseola, or of a vein of a typhus patient, is but little. Janowski thinks it is so for this reason: "In the first place, the parenchymatous organs, especially the spleen, are the places where the typhus-bacilli accumulate; from here they are carried by the blood-stream into the general circulation only in small quantities, as is proven by post-mortem examinations of the blood of typhus patients; and we can take but little blood for diagnostic purposes. Perhaps more favorable results might be obtained if considerably more blood could be taken, in short, if a patient could be actually bled; but such a measure, even if not carried to the extreme, seems inexpedient in a disease as debilitating as typhus. For this reason the examination of the blood of typhus patients has no significance for diagnosis."—*Centralblatt für Bakteriologie und Parasitenkunde*, No. 20, 1889.

ON PLEURISY CAUSED BY DIPLOCOCCUS PNEUMONIE.—NETTER, reports in the *Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris*, 46 cases of pleurisy, 40 of which were caused by diplococcus pneumoniae; he distinguishes two kinds of pleurisy. The first kind occurs after pneumonia. It is generally of a purulent character and susceptible to cure, but frequently leads to perforation into the lung and pneumothorax. It often occurs epidemically during the months when pneumonia is most frequent. It occurs oftener in young people than in old people. As a mark of distinction from other pleurisy the author mentions that the exudate is creamy and does not easily separate into plasma and serum. Often the exudate accumulates in a circumscribed pleural sac and the disease takes a

chronic course. In 5 cases of this kind of pleurisy the author was enabled by the plate-cultures to prove the diplococcus pneumoniae.

The second kind of purulent pleurisy caused by diplococcus pneumoniae originates independently, *i. e.*, without pneumonia. The author called attention to the occurrence of this disease as early as 1886, and has observed 10 cases so far. He also mentions the observations made on this subject by Weichselbaum and Serafini. In 8 of his cases he instituted bacteriological researches and experiments on animals; four times he found the diplococcus pneumoniae alone, and four times he found it associated with the staphylococcus and streptococcus pyogenes. Supported by his observations, Netter believes that the greater number of purulent pleurisy occurring in children is caused by the diplococcus pneumoniae.—*Centralblatt für Bakteriologie und Parasitenkunde*, Vol. vi, No. 1, 1889.

ON THE TREATMENT OF JUNCTA-ARTICULAR FRACTURES WITH MASSAGE.—A. L. LAPERVENCHE says: The vicinity of a joint enhances the gravity of a fracture and demands appropriate treatment. As it must be our aim to aid the resorption of the blood discharged which, playing the rôle of a foreign body, is capable of causing a subacute plastic arthritis, massage appears certainly indicated. Facilitating the functions of secretion and excretion of the skin, rendering the afflux of blood easier, favoring nutrition and the contractility of the muscles, one of its most beneficial results will certainly be the avoidance of stiffness of the joint. Practice has begun to confirm this theory. Fractures of the lower limbs, of the radius, femur, humerus, elbow, knee-pan are treated with massage to the best advantage. In this way not only atrophy of the limb is avoided and the movement of the joint reestablished, but the cure is also more rapid.—*Gazette Médicale de Paris*, Vol. vi, No. 26, 1889.

ON THE SEMIOTIC SIGNIFICANCE OF A RED LINE BORDERING THE GUMS IN TUBERCULOUS PHTHISIS.—In an article on this subject published by G. STICKER in the *Manch. Med. Wochenschrift*, No. 37, 1888, the author declares that the symptoms which—as experience has shown—may precede phthisis (pseudo-chlorosis, different kinds of dyspepsia) are to be taken with great probability as a manifestation of latent phthisis if the red line bordering the gums exists simultaneously with them. In persons of youthful age it is undoubtedly so. The absence of this red line, under the circumstances, is without significance for the diagnosis in female patients; but where young male patients are concerned the probability of latent tuberculosis is very small if that red stripe on the gums is missing. The author illustrates the application of this theory by several observations.—*Centralblatt für Klinische Medizin*, No. 26, 1889.

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THE NEW CÆSAREAN SECTION.

Two notable papers that relate to the "New Cæsarean Section" have appeared at a recent date. FRITSCH,¹ of Breslau, has modified the method of SÄNGER in two important particulars. In the first place, he has rejected the sero-serous suture. In a case of Cæsarean section, according to Säger's method, he loosened the elastic tube after the insertion of the muscle suture, to restore the circulation, when he was surprised to see the arrest of hæmorrhage before the introduction of the sero-serous suture. Observation of the conduct of the uterine walls after the enucleation of myomata and the insertion of the *étage* suture confirmed the impression that the Säger sero-serous stitch is superfluous. The way for this step, however, was prepared by Schroeder, who repeatedly asserted that the welting-in of the peritoneum was not only unnecessary, but also a source of danger, that best union could be effected by the juncture of the cut edges of the peritoneum. The second change in the technique of the operation is not less significant. Fritsch recommends that the uterine suture be used to include all the tissues—decidua, muscle and peritoneum—instead of the muscle and peritoneum only as practiced by Säger. If the case is operated on early, the cavum uteri is aseptic, and its sterilization by irrigation and iodoform is purposeless. The decidua is as sterile as the muscularis. Moreover, when the stitch is tightened, the thread rubs through the decidua and comes to lie upon the muscularis. The advantages of this simple suture are substan-

tial. Much time and trouble are saved—of moment in such an operation. Then, it is possible to effect a more exact apposition of the cut surfaces, and a firmer line of union by reason of the amount of tissue included. Hæmorrhage is also better arrested, when the entire thickness of the uterine parenchyma is embraced for some distance from the edge of the cut. Fritsch inserts the suture about 1 centimetre from the edge of the cut on the left side, passes it through all the tissues to a point distant about $\frac{1}{2}$ centimetre from the internal edge; on the right side, the suture is passed from within outwards. The sutures are separated by a distance of 1 centimetre.

Against these modifications, but little on *a priori* grounds can be urged, seeing that Fritsch reports two successful cases. The chief danger in connection with the second item—the insertion of the suture through the decidua—consists in the liability to infection of the suture material, particularly if silk be employed. This danger is present even when the cavum uteri is aseptic at the time of operation; obviously, the risk is greatly increased, when the decidua is infected after attempts at delivery *per vaginam* and the like. On this subject, DR. BAYARD HOLMES² has well said: "It makes no difference how small an amount of infection gets into a solid spongy material like a piece of silk. Cells do not migrate into the silk suture far enough to drive out the infection and, as it were, granulate it off. Therefore, when the least end of a buried silk suture becomes infected, it is only a matter of time until colonization of the whole suture takes place. In the tissues surrounding the suture granulation tissue will appear, and a coagulation-necrosis of the wall of this sinus will cause a collection of pus to appear at the point of least resistance."

If further experience supports Fritsch's modification, the old classical Cæsarean section will be rehabilitated after its notable substitution first by Porro's supra-vaginal amputation and secondly by Säger's ingenious method. This fact, however, will not lessen the merit of the work of the observers just named. As remarked by Fritsch, "Säger's great services are universally recognized, they depend neither upon silver wire nor sero-serous suture."

The second paper, by H. THOMSEN,³ contains

¹ Transactions of the Gynecological Society of Chicago, June 21, 1889.

² Centralb. f. Gyn., No. 24, 1889. (Original—Mittheilung.)

³ Centralb. f. Gyn., No. 23, 1889. (Original—Mittheilung.)

the results of an experimental study of the best suture material that may be used in intraperitoneal operations, in general, and in Cæsarean section in particular. The experiments were performed on rabbits, cats, and bitches, immediately after they had cast their young. Incisions several centimetres in length were made through the right and left horns of the uterus, and these cuts were united with the suture materials under investigation. Different material was used to unite each cut. Sutures were also placed in the omentum and abdominal wall, to test not only the behavior of the ligature, but also the relative absorptive powers of the sites selected as compared with the uterus. The materials used were carbolic catgut, chromic acid catgut, silk and silkworm-gut. All materials were sterilized, as demonstrated by control cultures.

Thomsen draws the following conclusions: 1. Silk is the safest and best suture material, because it can be absolutely sterilized, and in time is absorbed. 2. Chromic acid catgut, silkworm-gut, like silver wire, are incapable of resorption, and ought not to be used. 3. Carbolic catgut, like all forms of catgut, ought to be rejected on account of the danger of infection. Moreover, carbolic catgut is unfitted for large intra-peritoneal wounds by reason of its rapid absorption.

The methods of this investigation are well chosen, and the conditions of the experiments eliminate common sources of error. Thomsen's conclusions, accordingly, may be accepted as decisive in the vexed question of suture material, for the time being at least.

PRURIGO SECANDI.

PROFESSOR LÉON LEFORT, editor, or more accurately speaking, author of successive issues of *Malgaigne's Surgery*, and one of the leading operators in France, is not a person whom even the most venturesome of recent graduates will be apt to accuse of undue timorousness in matters surgical. Much weight may, therefore, happily be attached to a warning from such a source against the reckless and ill-considered abuse of the knife, which has unfortunately been rendered possible by the introduction of anæsthetics and antiseptic measures, and which has reached so far that the legitimate field of surgery has often been abandoned in an apparent endeavor to ascertain how

much vivisection is compatible with the temporary maintenance of life.

Among the things which have almost become affairs of everyday routine, LeFort remarks, cancerous stomachs have been resected, the spleen and the kidney extirpated, vesical tumors removed, the uterus and tubes ablated; multitudes of women have been castrated, even when the ovaries were healthy: the knee-joint has been opened to suture a simple fracture of the patella; the abdomen opened to fasten to its wall a prolapsed uterus, or even solely for diagnostic purposes, etc.; and he cites an instance wherein a surgeon, to spare a young woman's modesty the inconvenience of a vaginal examination, preferred an exploratory laparotomy, with the satisfactory result of discovering that there was no abdominal lesion. Certain operators of established notoriety, or even their junior imitators, find occasion to perform their favorite procedure hundreds of times within a few months; be it thyroidectomy, nephrectomy, hysterectomy, salpingotomy, radical cure of hernia, or aught else. Of this, the author says: "When I see the multiplication of successive operations for affections which a hospital experience of more than forty years has shown me to be either relatively rare or curable by non-operative treatment, I am led to believe that many of these surgeons, instead of asking themselves what operation the disease and the hopelessness of any other treatment compels them to perform upon the patient, inquire rather who is the patient whom they can induce to undergo the operation just then under consideration not to say in fashion."

Several influences combine to encourage this operative craze, and of these the first to be mentioned is the pecuniary appetite which threatens to degrade the healing art to the level of a trade. Verneuil is quoted as intimating that some surgeons who persuade a patient to risk the speedier possibilities of the knife, with argument that "time is money," may be suspected of a mental reservation which whispers "operation is money also," and it is even alleged that in Paris—let us hope nowhere else—a commission on the operator's fee is given to the physician who procures the case, so that the latter is tempted rather to seek the specialist who will insist on the most lucrative, if unnecessary, operation, than to consult the surgeon who can give the wisest ad-

vice. The public, hearing of brilliant successes, but ignorant of possible dangers and disastrous failures, and impatient of the tediousness of safer and surer medical treatment, is readily induced to fly to evils that it knows not of, and thus aids skilled hardihood in bringing needlessly heroic measures more and more into vogue.

A fanatical and exaggerated confidence in anti-septic methods plays no small part in perpetuating the abuse. If ovariectomy be fatal in one seventh of the operations performed, hysterectomy in one fourth, nephrectomy in one-third, or laparotomy for myomata in one-half, the deaths are attributed to neglect of some minor detail—to the employment of an ill-prepared ligature or the omission of this or that petty precaution against the entrance of a few stray “germs,”—and the blame is ascribed to the individual surgeon, not to the operation.

The principles which should guide the true surgeon's intervention are these: The fact that an operation is capable of curing a disease is not in itself a justification for operating; the gravity of the operation must be compared with the gravity of the disease; the benefit to the patient must be proportional to the danger to which he is exposed. It is not admitted that the mortal character of a malady is a sufficient reason for desperate expedients. There are cases where the surgeon must recognize the impotence of his art; his first consideration should be to avoid doing harm, and he should learn to abstain whenever the immediate dangers of active interference are greater than the temporary amelioration that may be hoped for. He should not imperil life to relieve an infirmity or deformity which does not menace existence, unless it be such as to incapacitate the sufferer from earning a livelihood. Ankylosis in a position rendering a limb useless, extreme genu valgum, exaggerated rhachitic distortions, ulcerated talipes preventing walking, may warrant resection, osteotomy, or even amputation, but it is a different thing to expose a patient with reducible hernia to the risk of immediate death in order to save him the annoyance of wearing a truss, or to avert the improbable chance of a strangulation twenty or thirty years later. The interest of the patient is to be placed above all other considerations; a cure sought by the surest and least hazardous therapeutic means rather than by dangerous displays of dexterity;

solicitude for the sanctity of human life, should override professional ambition or monetary covetousness. If any case give cause for doubt, let the surgeon pause and ask himself “what he would do, what he would advise, if the question concerned his mother, his wife, his child; and let the answer dictate his conduct. So will he often reject perilous heroic exploits; he will perform fewer operations; he will acquire notoriety less easily, and fortune, perhaps, not at all; but he will be sure of fulfilling his duty as a good and honest surgeon, and of being regarded by his patients as *vir bonus medendi peritus*.”

The warning which we have briefly transcribed from its foreign source is reproduced in all its fervid eloquence by the *Gazette Médicale de Montréal* from the latest edition of the *Médecine Opératoire*, of Malgaigne and LeFort, and most of our readers will be willing to admit its pertinence—at all events, to France. In displaying the beam which obscures the surgical eye of continental Europe, it would, of course, be invidious to suggest the possibility that ophthalmic introspection might detect a mote in our own.

EDITORIAL NOTES.

HOME.

DR. THOMAS WATERMAN, of Boston, is said to be the most skilful ventriloquist in that city.

DR. WILLIAM WARREN POTTER, of Buffalo, N. Y., has had conferred upon him the degree of Doctor of Medicine, *Honoris Causâ*, by the Kentucky School of Medicine.

THE AMERICAN SOCIETY OF MICROSCOPISTS commences its annual meeting at Buffalo on the 20th inst.

EPHRAIM CUTTER, M.D., LL.D., F.S.Sc., has received a gold medal from the Society of Science, Letters and Art of London, for his paper on “The Relations of Medicine and Music,” and also for one on “Hygienic Drinks” and one on “Cleaned Whole Wheat.”

DR. WILLIAM HAILES, JR., of Albany, N. Y., will read a paper on “Intubation of the Larynx” before the meeting of the British Medical Association.

AN EPIDEMIC OF DYSENTERY.—Dysentery has become epidemic at Warsaw, Ill., and the people

are becoming greatly alarmed. Fifteen deaths have occurred since the 29th ult. Four died on the 1st inst. and four on the 2d. It is now estimated that at least 180 cases exist in Carthage, Ill., and it is feared many of them cannot recover. The victims are taken suddenly and die in a short time. The disease has appeared at Hamilton, and is said to be epidemic at Canton and Cahoka, Mo.

ASSOCIATION ITEMS.—Drs. D. Webster Prentiss, of Washington, and L. Duncan Bulkley, of New York, are the delegates to the meeting of the Canadian Medical Association. The name of Dr. Kinyoun should have appeared in the Annual Report of the Committee on State Medicine in place of Dr. S. T. Armstrong. Dr. Charles W. Brown, New York, is a member of the Committee on Necrology, not "J. W. Brown."

THE CANADIAN MEDICAL ASSOCIATION.—We again call attention to the fact that the annual meeting of the Canadian Medical Association will be held at Banff, a station on the Canadian Pacific Railway, in the heart of the Rocky Mountains, at the entrance of the "Canadian National Park." The meetings will be held on August 12, 13 and 14. The British Medical Association and many societies of the United States have been invited to attend. Special rates are offered by the railway company. Application should be made to the General Secretary of the Association, Dr. Bell, whose address is Union Avenue, Montreal.

SANITARY PROGRESS.—Why is it that our State Legislatures do not take more interest in enacting laws to secure immunity from preventable diseases arising from inadequate sanitary regulations or the enforcement of existing laws? *The Sanitary News* in commenting on this subject says: "Legislation seems to be the greatest obstacle in the way of sanitary progress. Science has made plain the duties of officers and citizens, but legislation is tardy in providing means for their enforcement."

FOREIGN.

FATHIER CONRADY has been stricken with leprosy at the leper settlement in Molokai.

A UNIVERSITY under British tuition is being established at Peking, China, and the College of Medicine in affiliation therewith is in working order.

FEMALE MEDICAL PRACTITIONERS in Russia are forbidden to attend adults of the male sex.

IN GERMANY the Government has come to the conclusion that there are enough medical colleges in the country and refuses to allow any more to be organized. PROF. FRESENIUS, of Wiesbaden, after a long series of chemical analyses, declares that an egg contains as much nourishment as a pound and an ounce of cherries, a pound and a quarter of grapes, a pound and a half of russet apples, two pounds of gooseberries, and four pounds of pears, and that 114 pounds of grapes, 127 pounds of russet apples, 192 pounds of pears, and 327 pounds of plums are equal in nourishment to 100 pounds of potatoes.

IN FRANCE the Director of the Assistance Publique has distributed among the *infirmiers* and *infirmières* of the Paris hospitals 2,000 tickets for the Paris Exhibition. The decoration of the Legion of Honor has been conferred upon Dr. Allan Herbert, physician to the British Embassy at Paris. The French Society for the Advancement of Science is now in session. The practical sanitation of the Paris Exhibition is said to be execrable. The Minister of the Interior has given 1000 francs to the Paris Ambulance Organization.

IN GREAT BRITAIN the Privy Council has issued an order in the City and Metropolitan District of London that dogs are to be muzzled, except those actually employed as sporting dogs or in the capture of vermin. The spread of rabies has brought forth the order. Unmuzzled dogs will be slaughtered, as also will those with or suspected of rabies, or having been bitten by a rabid dog. The Princess of Wales has accepted the Presidency of the National Pension Fund for Nurses. The weekly issue of the *British Medical Journal* has reached 15,550 copies. Professor Struther has resigned the Chair of Anatomy at Aberdeen University. An exhibition of electrical appliances is now open at Birmingham and will continue for three months. Deputy Surgeon-General Francis Day, a distinguished officer and naturalist, died at Cheltenham on the 10th ult. The sanitary condition of Glasgow is very bad, and the Corporation is considering the necessity of applying to Parliament for increased sanitary powers. The London Hospital has become affiliated with the National Pension Fund for Nurses.

TOPICS OF THE WEEK.

PHYSIOLOGICAL LIMITATIONS.

From the able address of DR. DAVID W. CHEEVER at the annual meeting of the American Surgical Association held in Washington, May 14-16, 1889, we make the following brief extract:

"When we consider physiology we are struck both by its great progress and by its imperfections. The older physiology is obsolete and discarded, but in the newer physiology the functions of some large and important organs are still undetermined. The ductless glands, for instance, the spleen, the thyroid, the thymus and the supra-renal capsule.

"An ignorance of their function renders the surgeon unable to predict the consequences of their removal. Of what avail the brilliant operation to excise a double goitre if it is to be followed by an obscure degeneration of the nervous or glandular system? Again, in organs of known function the limit of the digestive power of different portions of the alimentary canal is not yet definitely learned.

"How can we get along without a gall-bladder? How important is the pancreas? Can the duodenum supplant the stomach in nutrition? How much ileum can be removed without starvation? What will the rectum digest? All these are pertinent questions for the physiologist, and have a direct bearing on modern surgery."

PRESIDENTIAL ADDRESSES.

At the last annual meeting of the Ohio State Medical Society the President, DR. P. S. CONNER, dealt with the conventional "President's Address" after this fashion:

"As is the appendix to the intestinal tract, a useless survival of a once important organ, so is the presidential address to the annual proceedings of the State Medical Society. In the days when books and journals were few, communication slow, professional work physically harder than at present, there was, I doubt not, good reason for requiring of the recipient of high honors an abstract of the year's progress, suggestions of the work that might and should be done, or reports of diseases and injuries carefully investigated and successfully treated.

"Now that to each one of us what appeared in print but a short time ago in San Francisco, Boston, Vienna or St. Petersburg is familiar talk, it may be well asked of the inaugural address, *Cui bono?* Hardly yours; surely not his to whom the months of prospect of its preparation are as the fly in the ointment of the apothecary. But custom is imperious and we are all its slaves. Like my predecessors, I obey its mandates."

CAFFEINE AS A TONIC.

DR. HENRI HUCHARD has some good observations to present on the use of caffeine as a tonic or excitant in adynamic states. He considers it much superior to ether, which may be more exciting but is much less tonic in its action. The diuretic action of caffeine is now admitted by everybody, but its cardiac action is still contested. One point in the use of caffeine in adynamic states is

that it can be given in considerable quantities without danger. In one case of extreme weakness (with from forty to fifty stools a day) as many as ninety-five hypodermatic injections of caffeine were given in a month. Dr. Huchard uses these injections with great freedom in typhoid fever at the Bichat Hospital, as well as in cases of serous pneumonia, and reports a number of cures in very grave cases. In experiments that M. Huchard made on animals, he found that the drug acted on the nervous system, and Semmola, (of Naples) states that its principal action is on the medulla oblongata. In any case two important facts are evolved from Huchard's experiments: First, that caffeine has a remarkable efficacy in large hypodermatic injections in all adynamic cases. Secondly, it can be given in large doses without danger. M. Huchard employs the following formulas: R. Caffeine, 2 grams; benzoate of sodium, 3 grams; and distilled water, 6 grams. The solution must be made while hot. Each syringeful contains 20 centigrams of caffeine. Sig.: Inject 6 to 10 syringefuls *per diem*. The second formula is: Caffeine, 4 grams; salicylate of sodium, 3 grams; distilled water, 5 grams. Here the syringe contains 40 centigrams of caffeine, and from four to five injections are given each day.—*Paris Correspondence New York Medical Journal*.

LEPROSY IN MADRAS.

According to census returns, the proportion of lepers amongst the population of Madras 4.4 per 10,000 against 5.2 in Bengal and 8.5 in Bombay; but there is reason to believe that these figures fall short of the actual extent of the disease. In Madras it is on the whole slightly more prevalent in coast districts than in inland, the ratios being 4.9 in the former, and 4.4 in the latter per 10,000 of population. The proportion of lepers in the several districts ranges from 2.0 in Coimbatore to 10.5 in Madras City. The districts showing the highest ratios next to Madras are Nilgiris 8.0, Tanjore 7.0, and Chingleput, Malabar, and North Arcot each 6.0 per 10,000. The disease attacks Europeans and Eurasians as well as natives, but is most common in natives. The propagation of leprosy is no doubt largely influenced by heredity, but recent observations appear to show that it is also contagious. In localities in which lepers are at large with the disease in an active state, and having open sores, there seems to be an increased tendency to fresh cases amongst the general population. As regards the part which heredity plays in the transmission of leprosy, we know that persons with the disease in an active state have diminished fecundity, and that mortality runs high amongst the offspring of lepers. These two peculiarities, therefore, tend to keep in check the leprous population, but I have no doubt that it is increased by contagion and probably other influences. That segregation is of value in holding the disease in check seems well established, but to be of much value in India it would require to be carried out on a more extended scale than at present.—*Surgeon-General Bidie, British Medical Journal*.

CHLOROFORM IN OBSTETRICS.

In regard to the use of chloroform in obstetrics, M. BUDIN gives numerous cases to prove that labor pain can

be lessened by quite small doses of chloroform in most cases. It is given here in the manner called "*Queen's chloroforming*," that is to say, just enough to dull sensibility. In a few cases, however, it is necessary to proceed to complete anæsthesia, which does not prevent labor going on to a successful issue. The principal indication for the use of chloroform in labor is found in extreme pain. Often it is only during the period of expulsion that it is needed, but when the pains are intense during dilatation it may also be used. Rigidity of the os uteri is an important indication. There is an extraordinary degree of tolerance in parturient women for chloroform, so that the contra-indications are extremely few.—*New York Medical Journal*, July 27.

NATURAL ELECTRICITY.

An extraordinary tale comes from Burmah. Mr. Ronald H. King, an electrician well-known to the Burmese, while on a prospecting and shooting expedition in the island of Labuan, is said to have discovered a mineral from which electricity can be obtained without apparatus of any kind whatever. The mineral is described as being in the form of a black stone, of excessive hardness, and very great specific gravity, being nearly as heavy as platinum. A small block in the shape of an irregular cube, measuring 4.3 inches one way, by 5.2 inches the other way was brought away, and on bringing it into the testing room, a strong effect was noticed upon the galvanometer. At first it was thought that the mineral was an ordinary loadstone, but on tests being made, it was found that the force was more akin to that of an electro-magnet, and that a strong current would flow when the mineral was connected in a circuit. Further tests revealed that a difference of potential of forty-seven volts could be detected at the extremities, the internal resistance of the mass being twenty ohms. The block appears to waste away very slightly, leaving a slight gray powder upon the surface when connected up for some time. The electrician now uses the block to light a couple of incandescent lamps in his laboratory!—*Times and Register*.

SPECIAL HOSPITALS.

The *Boston Medical and Surgical Journal* of July 25th devotes a page to a review of an address recently delivered in London by SIR ANDREW CLARK, President of the College of Physicians. After an eloquent plea for the generous support of the larger hospitals, he pays his respects to a class of special hospitals who seek to divert and divide the public charities, after this wise:

"A doctor who cannot get on in the ordinary way takes to studying the great toe, and he discovers something about it never before known. In the course of his studies he ascertains that the diseases of the organ are not only supremely important in themselves, but that they have the most intimate relation to all the other serious diseases of the body. He also invents a wonderful instrument, whereby he can look into the great toe and see what is threatening, and prevent all those terrible things which happen in the organ and affect the whole system. He goes to his friends, shows them his instrument and tells them of his discoveries. They then club together and establish a Hospital for the Treatment of Diseases of the Great Toe.

They soon get patients who are convinced of the vast importance of the diseases of the great toe. Marvelous cures are effected, and all sorts of frightful diseases are prevented. They have an annual meeting. They have a Chairman who sets forth bashfully in the presence of the great physician the diseases of the great toe, the wonderful things that have been done, the service which has been rendered by the hospital, the terrible prejudice it has had to encounter, and the determination that this great institution shall be liberally supported, notwithstanding the prejudices of the medical profession and of those who herd with them."

In all seriousness he raises the question whether special hospitals have not been overdone in London, and the contributions of benevolent people directed to unwise uses. And the journal from which we quote raises the question whether there is not a growing tendency in this direction in our own large cities.

POISONING WITH ACETANILIDE.

Before the Baltimore Medical Association, DR. J. E. GIBBONS recently read a paper on the results of a mistaken dispensing and administration of a one-drachm dose of acetanilide where five grains of antipyrin had been intended. The *Maryland Medical Journal* for July 6th contains a brief account of the symptoms, which were those of cardiac depression, cyanosis, and nausea. The treatment, which removed the threatening prostration, consisted of the use of tincture of belladonna and brandy. The headache, for which the dose was taken, was not relieved, and Dr. Gibbons holds that if the second dose had been repeated in two hours, as the mistaken directions ordered, death would have been the result. There was an error on the part of an apothecary, it is alleged, in writing out the copy of a prescription, causing the substitution of three drams of acetanilide for half a drachm of antipyrin. It was a case of unauthorized "borrowing" of a prescription by a neuralgic person who had not been prescribed for by a physician. The antidotal doses of belladonna consisted of four drops of the tincture, every half-hour, for four hours, and at wider intervals afterwards.—*N. Y. Medical Journal*, Aug. 3, 1889.

WILKESBARRE'S BAD WATER.

A despatch from Wilkesbarre, Pa., states that the typhoid fever epidemic in that city does not appear to be on the decrease. The total number of deaths within three weeks is thirteen. According to a well established rule in typhoid, that the death-rate runs at from 10 to 12 per cent., this makes a certain existence of over 100 cases in the city. It is highly probable that the total number of cases is largely in excess of that number. Dr. L. H. Taylor, representing the State Board of Health, made an examination of the water-supply system of the Wilkesbarre Water Company, and his report confirms the first theory of the cause of the disease. He finds there are twenty-five or thirty houses along the course of Laurel Run, the stream from which the water is taken, and holds the belief that the excessive rains of last month washed the refuse of these houses into the stream. In addition to the typhoid fever cases there are a great number of cases of malarial fever, dysentery, and kindred diseases.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Fortieth Annual Meeting. Report of Sections.

Sections on Diseases of Children.

FIRST DAY, JUNE 25.

The Section was called to order by the Chairman, DR. JOHN A. LARRABEE, who delivered an able and eloquent address. He congratulated the Section on the opportune time and pleasant place of the meeting, and said that none could be more fitting for the burial of professional animosities. An earnest plea was made for the rejection of the amendment to the constitution pending before the Association to abolish the Section on Diseases of Children, and spoke highly of the good work that the Section has and can accomplish.

On motion of DR. CHRISTOPHER, of Ohio, the Section unanimously resolved to continue as a distinct Section, and a committee of three were appointed to bear the resolution to the general Association, and defend the continued autonomy of the Section.

On motion of DR. E. F. BRUSH, of New York, the recommendations of the Chairman's address were referred to a committee, composed of Dr. Brush, of New York, Dr. Christopher, of Ohio, and Dr. Watson, of New Jersey.

DR. T. B. GREENLEY, of Kentucky, read a paper on *The Management of Infants during the First Year*. The doctor gave statistics of the alarming mortality during the early years of infant life, and carefully reviewed the causes for it. He recommended the better education of mothers, and advocated greater care of the infant in every particular. Syphilis, in his experience, was a frequent disease.

The paper was discussed by Drs. Senta, of Texas, Whitney, of Rhode Island, Watson, of New Jersey, and Latimer, of Maryland.

DR. E. F. BRUSH, of New York, read a very valuable paper on *Cow's Milk for Infant Food*. The doctor took the position that cow's milk was the best and only practical substitute for the mothers, and showed that if as great energy were bestowed upon improving the quality of it, by overseeing its source and its can after milking, as has been given to the manufacture of various chemical foods, great improvement in infant feeding would result.

DR. J. A. JEFFRIES, of Massachusetts, commended Dr. Brush's paper, and advocated sterilizing, when the milk cannot be obtained perfectly fresh.

DR. CHRISTOPHER, of Ohio, commended the points made by the doctor on the management of dairies. In Cincinnati he had seen some deplorable instances in the manner of caring for milch cows.

The paper was further commended and discussed by Drs. Sheldon, of New York, Latimer, of Maryland, Gates, of Pa.

On motion of DR. WATSON the Secretary was instructed to preserve the records of the Section, and to give them to his successor.

On motion of DR. W. P. WATSON a committee of three were appointed, to bring in nominations for Chairman and Secretary of the Section for the ensuing year.

SECOND DAY, JUNE 26.

The Section was called to order at 2:15 P.M. Dr. J. A. Larrabee, Chairman.

A paper by DR. N. GUHMAN, St. Louis, Mo., on *Summer Diarrhoea and Dysentery* was read by title.

DR. PETER HOOPER, of Philadelphia, Pa., read a valuable paper on *The Intestinal Diseases of Children during Hot Weather*.

The paper was discussed by Drs. W. P. Watson, Jersey City, I. N. Love, St. Louis, Mo., and the Chairman.

The paper, *Heart Failure in Diphtheria*, by DR. G. W. JONES, was read by title.

The paper on *Intubation of the Larynx with report of Cases* was read by DR. F. E. WAXHAM, of Chicago. The doctor reported continued success in the operation.

The paper was ably discussed by Drs. G. W. Gay, of Boston, and Whitney, of Rhode Island.

DR. H. D. CHAPIN, of New York, read a paper on *Pseudo-Membraneous Rhinitis*. The doctor held that there was a pseudo-membraneous rhinitis which was distinct from diphtheria, and that it was a comparatively mild affection.

DR. COHEN, of Philadelphia, agreed with the doctor in there being each a disease distinct from diphtheria.

DR. WHITNEY thought the gentleman had described cases of nasal diphtheria.

DR. C. R. EARLY, of Ridgeway, Pa., read an exhaustive paper on *Scarlatina*.

The committee on nominations reported the name of Dr. I. N. Love, of Missouri, for President, and Dr. E. F. Brush, of New York, for Secretary of the Section for the coming year.

The Report was unanimously adopted.

THIRD DAY, JUNE 27.

Section called to order by the Chairman.

The committee on the Chairman's address reported that they had met with the Committee on Dietetics of the Association, and had adopted the following preamble and resolutions:

WHEREAS, Certain garbled extracts from the proceedings of this Committee on Dietetics, and the Section on

Diseases of Children, have been published in medical journals as advertisements, and thereby have reflected upon this Association; therefore be it

Resolved, That the Committee on Dietetics and the Section of Diseases of Children, have not in the past, or do they now, commend any of the proprietary preparations used as foods, and

Resolved, That the said Committee and Section earnestly protest against the action of manufacturers in charging partiality for any food, and they hereby, condemn the action of those medical journals which have published such advertisements, and further,

Resolved, That a copy of these resolutions be sent to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for publication.

E. A. Wood, M.D., Chairman Committee on Dietetics; Frank Woodbury, M.D., Secretary. J. A. Larrabee, M.D., Chairman Section on Diseases of Children; C. G. Jennings, M.D., Secretary.

A paper by DR. M. P. HATFIELD, of Chicago, on *The Value of Hydrogen Dioxide in the Treatment of Children*, was read by title.

A paper by DR. D. S. BOOTH, of Sparta, Ill., on *Penal Rule in Public Schools*, was read by title.

DR. S. P. DEAHOF, of Potsdam, O., read a paper on *Polio-myelitis Anterior Acute*, in which he related cases showing the difficulty in diagnosis often experienced, and the inutility of most forms of treatment. He had seen no benefit from electricity.

Discussed by Drs. King, of Chicago, and Peter Hooper, of Philadelphia.

DR. I. N. LOVE, of St. Louis, read a valuable paper on *One Year of Acetanilide in Pædiatric Practice*, in which he commended the remedy very highly in various febrile diseases, chorea and whooping cough, and praised the drug above antifebrin as an antipyretic and analgesic.

The paper was further discussed by Drs. Dixon, of Kentucky, Hill of New Hampshire, King, Watson, New Jersey, Atkinson, Larrabee, and Osler.

DR. J. C. WILSON's paper on *Visceral Neuralgias in Children* was read by title.

DR. WM. PERRY WATSON, of Jersey City, read a paper on *Atropin in Enuresis*. Had found usually good results from the use of the drug. He had given the remedy in thirty cases, 1 gr. to 1 oz., one drop each year.

The papers were discussed by Drs. Love, Larrabee, Knapp, of Boston, and Jeffries, of Boston.

Section of Dental and Oral Surgery.

FIRST DAY, TUESDAY, JUNE 25.

The Section was called to order by DR. E. S. TALBOT, Secretary of the Section, who announced the fact of the death of Dr. F. H. Rehwinkel, of Chillicothe, O., Chairman of the Section, which occurred on June 8, 1889.

On motion of DR. JACOB L. WILLIAMS, of Boston, Dr. W. W. Allport was elected Chairman *pro tempore*.

DR. J. S. MARSHALL, of Chicago, moved the

appointment of a committee of three to draft suitable resolutions upon the death of Dr. Rehwinkel. The following committee was chosen: Dr. W. W. Allport, of Chicago, Chairman; Jacob L. Williams, of Boston; and W. X. Sudduth, of Philadelphia.

DR. W. H. ATKINSON, of New York, read a paper on *The Origin of Pus*. A *résumé* of the paper is as follows:

1. Inflammation is a disturbance of nutrition of a tissue causing a recurrence of the embryonal condition of the tissue involved.

2. The embryonal condition is established by the breaking up of the tissue into those medullary or indifferent corpuscles which at an early stage of normal development have built up the tissue.

3. The medullary corpuscles arise not only from the protoplasmic bodies of the tissue, the so-called "cells," but also the intercellular or basis substance is productive of such corpuscles, as these have shared in the formation of basis substance in the process of normal development.

4. The medullary or indifferent corpuscles will still represent a tissue so long as they remain interconnected and continuous. By a simple reappearance of basis substance the most favorable termination is established, so-called "resolution."

5. If the inflammatory or medullary corpuscles have largely augmented, a number thereby remaining in original connection, the result will be productive, viz.: with a newly formed tissue of unusual size, a so-called "hyperplasia."

6. If the inflammatory corpuscles spring from previous "cells," basis substance and blood-vessels break asunder and become isolated, they will be suspended in an albuminous liquid, they will henceforth represent pus corpuscles.

Pus, therefore, is a destroyed tissue broken up into its constituent elements, and as such unfit for production of a new tissue, although the single pus corpuscle will remain alive and amoeboid almost indefinitely, as long as they are sufficiently nourished.

8. The emigration of colorless blood corpuscles certainly participates in the formation of pus and in the purulent discharge of proud flesh or granulation tissue, and is probably the main source of the pus.

9. Suppuration is caused by the presence of certain microbes, mainly the three varieties of staphylococcus, only when a previous inflammation be present in the tissue, furnishing a favorable soil for the development of the before mentioned microbes.

10. Staphylococcus is not the only antecedent of suppuration, it having been proved by experiments that the introduction of certain chemical agents unfavorable to the development of microbes may likewise be followed by suppuration.

The paper was discussed by Drs. Sudduth, Williams and Brackett.

DR. WM. CARR, of New York, then read a paper on *Diseases of the Antrum*, in which he refuted the statements frequently made by rhinologists that a large majority of the cases of antral diseases are caused by chronic rhinitis, polypi and other nasal diseases. The author claimed that 80 per cent. of all cases of abscess of the antrum were the result of diseases of the teeth, usually that of pericemental alveolar abscess, alveolo-pericementitis and necrosis. He has operated during the last eighteen months upon fourteen cases referred to him by a nose and throat specialist, of which none were caused by chronic rhinitis, none from hypertrophic rhinitis, one from dentigerous cyst, two from polypi, and eleven from diseased teeth.

The paper was discussed by Drs. Marshall, Sudduth, Atkinson, Williams, Talbot, and Brackett.

DR. W. W. ALLPORT, of Chicago, read a paper upon *Facial Neuralgia Associated with Pregnancy*. The author was not satisfied with any definition of the term "neuralgia" that he could find or any that he could make himself. He believed that neuralgia of the face, and especially of the teeth, was largely due, not to reflex neuroses but rather to the hyperæmic condition of the upper half of the body so constantly present during pregnancy. This hyperæmic condition is a prolific source of irritation to the nerve filaments of the mucous membrane, the skin of the face and the pulps of the teeth, and through this irritation most of the cases of neuralgia of the fifth pair of nerves had their origin.

The paper was discussed by Drs. Williams, Brackett and Atkinson.

On motion a committee on nomination of officers for the Section was appointed by the Chairman, consisting of Drs. Talbot and Marshall.

The Section adjourned to meet at 2 o'clock on Wednesday afternoon.

SECOND DAY, JUNE 26.

Section called to order by Dr. W. W. Allport.

The Committee on Nominations reported: For Chairman of the Section, Dr. Jacob L. Williams, of Boston; for Secretary, Dr. E. S. Talbot, of Chicago.

DR. J. S. MARSHALL, of Chicago, read a paper entitled, *The Oral Cavity of Pregnant Women*. The author described the changes which take place in certain cases of pregnancy in the blood, bones, teeth, excretions and secretions. Special attention was given to the conditions of the secretions of the mouth and the diseased conditions of the mucous membrane, gums and the teeth. The author claimed that in certain cases of pregnancy nutrition was impaired and as a result the bones and the dentine became abnormally soft, and that this softening of the dentine predisposed the teeth to decay. Overwork and mental strain also rendered the teeth predisposed to caries. The acid

condition of the salivary secretions augmented the action of the bacterium lactis in the production of caries.

The acids found in the mouth during pregnancy are the acetic, hydrochloric, uric and oxalic.

Lactic acid was the exciting cause of caries, as proved by Miller, of Berlin, but that he believed that the acids just named greatly augmented its action. Gingivitis and phagedenic pericementitis were often associated with pregnancy. The author called attention to the fact that in patients affected with phagedenic pericementitis there was often associated with it rheumatic affections, diabetes mellitus or albuminuria, and that during pregnancy these diseases of the mouth ran a more rapid course than in other cases. The exalted nervous state of the patient precluded severe or extended operations upon the teeth as miscarriage might be the result. Temporary fillings only should be inserted at such times.

This paper was discussed by Drs. Williams, Sudduth, and Andrews.

DR. E. S. TALBOT read a paper on *Statistics of Constitution and Developmental Irregularities of the Jaws and Teeth of Normal, Idiotic, Deaf and Dumb, Blind and Insane Persons*. He gave some of the theories which are generally held up to the present day. He then gave tables of irregularities of the teeth of healthy persons, one made by Dr. Ottofy, of Chicago, in which 317 males and 306 females were examined, showing that the largest percentages of irregularities was observed at the age of 8 years. The cuspid teeth appearing at this period was the cause, and that nature corrected most of these irregularities later in life. The author has examined the mouths of 1000 patients, showing 78 per cent. of normal cases and 22 per cent. of irregularities of the teeth. In 1,977 idiots 55.3 per cent. were normal, while 44.97 per cent. were abnormal. In 1,935 cases of deaf and dumb cases showed 45.5 per cent. normal and 54.95 per cent. irregularities.

In the examination of the mouths of the blind it was difficult to examine their mouths because of their sensitive nature. There were however enough examinations made to give a fair idea of the condition of the teeth and jaws. Out of 207 cases 50.7 cases were normal, while 49.97 cases irregularity. In 700 cases of insane cases 620 were normal and only 80 cases of irregularity. It will therefore be observed that in neurotic patients in which the disease is present at birth about one-half are afflicted with irregularities of the teeth, while in normal individuals, and also in insane cases, in which the disease is manifested after maturity, only about 20 or 25 per cent. of cases are noticed.

THIRD DAY, JUNE 27.

The Section was called to order at 9:30 A.M. by the Chairman, *pro tem.*, DR. W. W. Allport.

The reading of the minutes of the previous meeting was dispensed with, and the Chairman introduced DR. W. X. SUDUTH, of Philadelphia, who delivered a very interesting lecture upon *The Products of the Epiblast*, giving special attention to the rete malpighii as the formative layer in the development of glands, hair, teeth, nails, etc., also its relation to certain pathological conditions, such as epithelioma, carcinoma, and of the skin diseases. He laid particular stress upon the fact that the initiative step in the development of all the glands and tissues directly related with the skin was to be found in the deepest layer of the rete malpighii; which, as he plainly showed, was composed of oval and round cells, the bioplasts of Beale, and not of columnar cells as is generally understood.

The development of glands, sebaceous and sudorific, hair, and wool, the enamel organs of the teeth, etc., is the result of the evolution of a solid epithelial ingrowth which probably begins in the division of a single cell of the infant layer of the epiblast, which results in the formation of one of the above-named tissues, according to the hereditary tendency of the cell itself. The essayist dwelt on the fact that histologically it was impossible to differentiate between the several cells, as to whether they would form a hair, a gland, or the enamel organ of a tooth. They all have the same morphological appearance and give the same chemical reaction—and are also divided from the same layer of the epiblast. He held that each and every cell was a separate and individual unit, holding within itself an heredity tendency which governed the form of the resulting product. This was beautifully shown by the series of photo-micrographs, ranging from 200 to 1,250 diameters, in which the cellular structures were clearly defined—the development of a hair was followed from its incipency to the completion of a fully formed product, also the development of a tooth. The analogous development of the two up to the time when calcification begins in the latter, was graphically portrayed. It was also shown how that a new hair was derived from an epithelial bud which was thrown off from the deepest portion of the previous hair-bulb, and also that the cord for the formation of the permanent tooth arose in a similar manner from the side of the enamel organ of the temporary tooth. The speaker also showed the special connection of the deepest layer of the epiblast in the development of epithelioma and carcinoma. He said that the whorls of epithelial cells found in the former were not necessarily pathognomonic of epithelioma, in that similar nests of epithelial cells were to be found in embryonic tissues where rapid development was in progress, and that they were indications of the latter condition only. He showed a number of nests taken from sections of embryonic tissues, which were identical in their appearance

to the pearl nests found in epithelioma. In diseases of the skin he held that the deepest layer of the rete malpighii formed a very interesting field for investigation. The lecture was amply illustrated, and replete with information.

DR. ANDREWS' paper on *Pits and Fissures of the Enamel*, considered the etiology of decay at these points. He showed that pits in the enamel led to undermining decay of this tissue, and stated that these defects were more frequent than is generally supposed. These cavities, enlarging, reach the dentine, when infection and decay follows. He stated that the deep fissures in the grinding surfaces of the teeth often extended to the dentine, and that the dentine was generally defective within, the defect consisting of an interglobular formation at this point. This interglobular structure is more rapidly acted upon by the infection than is the normal tissue everywhere about it. This condition he considered largely hereditary. Exposure of the dentine is frequently caused by cracks in proximal surfaces near the neck, these being a source of infection equally with the pits and fissures of the grinding surfaces. Early infection was shown to fill the exposed tubuli with gas bubbles and granules. The gas bubbles are caused, probably, by the action of an acid on the lime cells of the dentine. This acid is given off as a waste product of the organisms. The bubbles may easily be mistaken for the organisms themselves.

The lectures were profusely illustrated by photomicrographs thrown upon the screen by the aid of the new and improved lantern of the McIntosh Battery and Optical Co. The lantern was operated by Dr. McIntosh, of Chicago.

The Committee on Resolutions on the death of Dr. F. H. Rehwinkel then reported the following resolution, which was carried:

Resolved, That the members of the Section on Dental and Oral Surgery in the American Medical Association desire to express their sorrow on the loss by death of the Chairman of this Section, Dr. F. H. Rehwinkel, of Chillicothe, O. And they would place on record their high appreciation of his character as a learned scientist and a skilful practitioner for many years, and as an honorable man in every walk of life.

On motion the Secretary was instructed to send a copy of the resolution to the family of the deceased, and that copies be sent for publication to the various dental journals of the country.

A cablegram was received from Prof. Busch, M.D., announcing the fact that a Section of *Odontology* has been organized for the Tenth International Medical Congress to be held in Berlin in 1890.

The following cablegram was ordered sent to Dr. Busch: "The Section on Dental and Oral Surgery sends congratulations for the establishment of the Dental Section, and pledges its hearty coöperation."

The Chairman's Address did not arrive as expected; it was therefore read by title and ordered printed in *THE JOURNAL* at the proper time.

On motion the Section adjourned.

American Ophthalmological Society.

Twenty-Fifth Annual Meeting, held at Pequot House, New London, Conn., July 17 and 18, 1889.

WEDNESDAY, MORNING SESSION.

The Society was called to order by the President, Dr. WM. F. NORRIS, of Philadelphia.

DR. CHARLES STEADMAN BULL, of New York, read a paper on

AN ANALYSES OF 90 CASES OF SIMPLE CHRONIC GLAUCOMA,

with special reference to the effects of iridectomy upon the acuity of vision and the visual field. Detailed histories of the 90 cases were presented, and the following conclusions formulated:

In endeavoring to draw some rational conclusions from the study of 90 cases, it seems wise to begin with a quotation from Priestly Smith, to whom ophthalmologists owe so much of their knowledge of the pathogeny and pathology of glaucoma.

1. In considering the expediency of an operation in chronic glaucoma, he says, "In every case of chronic glaucoma the responsibility of advising an operation is a heavy one and should on no account be undertaken without a full explanation to the patient or his friends of the almost positive certainty of blindness on the one hand, and of the uncertainties which beset the operation on the other. Having regard to the age of the patient, the impossibility of great benefit and the possibility of a painful and accelerated progress, the prudent surgeon will only operate on the express desire of the patient to receive the only chance of benefit, however small it may be." Armed with the preceding precaution, it seems to be our duty to operate in cases of chronic progressive glaucoma, and the earlier the better.

2. If the disease in a given case seems to be stationary and is still in the primary stage, and if it be possible to test the vision and the visual field at short intervals, delay in operating is permissible, but a weak solution of eserine or pilocarpine should be used daily, merely as an aid in controlling the course of the disease. The examination of these patients should be at short intervals and should invariably include tests for visual acuity and the careful examination of the visual field.

3. If the disease exists in both eyes, but with useful vision in both eyes, the eye in which the

disease is the more advanced should be operated on without delay, and the surgeon will be guided in his treatment of the fellow eye by the result of the operation on the first eye.

4. To insure the best result the incision should be made well into the sclerotic with a narrow cataract knife or a broad lance knife, and the entire iris from one end of the incision to the other should be carefully torn or excised from its insertion.

5. The most carefully performed iridectomy by skillful hands is sometimes followed by rapid loss of what sight still remains, sometimes partial, but, unfortunately, sometimes total.

6. A successful result is, in the majority of cases, more likely to follow the operation if it is performed early in the course of the disease, but the maintenance of the existing degree of vision even in these cases is not invariable.

7. As regards the question of symmetry, it is probable that in the large majority of cases, probably as much as 80 per cent., the disease is sooner or later present in both eyes, and a careful study of the cases seems to establish the fact that there can be no specific interval of time which insures the second eye against an attack.

8. If the patient is old and feeble and one eye still free from disease for a year or more after the other eye has become affected, it may be considered prudent to avoid an operation on the affected eye, as it is probable that the unaffected eye may remain free during the remainder of the patient's life.

9. The condition of the field of vision is no constant guide either in forming a prognosis as to the progress of the disease or in deciding as to the time of operation.

10. The acuity of vision bears no constant relation to either the success or failure of the operation.

11. The anterior chamber is usually shallow, is occasionally entirely absent, but is often apparently normal in depth. The condition of the chamber gives no reliable hint as to the state of the vision or the visual field, nor any indication as to prognosis.

12. The appearance and motility of the iris appears to have some bearing upon the prognosis, though perhaps not to the extent believed by Nettleship. The latter states that in the cases in which the iris reacts rapidly to eserine the operation proves successful. This has not always been the experience of the reporter, but in the majority of the cases in which eserine caused rapid contraction of the pupil, the visual acuity was fairly good and the field was not seriously limited.

13. The depth of the excavation in and the color of the optic disc seem to have no close connection with the defective vision or with the limitation of the visual field, nor did they offer any

constant guide as to prognosis or to the effect of operation upon the progress of the disease.

14. The condition of the intra-ocular tension is a very uncertain guide in deciding the time for operating. It may be normal or increased, or even diminished. It does not even seem to bear any constant relation to the degree of visual acuity, or to the state of the visual field. The steady maintenance of the increased tension, however, without any diminution, almost invariably indicates the necessity for an immediate operation, and this necessity is especially indicated if the tension is continually on the increase.

15. The health and age of the patient exert a decided influence upon the effect of the operation. Any marked evidence of senility is distinctly unfavorable to operation.

DR. H. KNAPP, of New York: During the past nineteen years I have operated on 670 cases of glaucoma, 226 of which were cases of chronic glaucoma. I think that the prognosis may be a little more favorable than has been indicated by Dr. Bull. I have had four cases in which malignant disease followed operation for chronic glaucoma. I do not agree with the author as to the advisability of the continued use of pilocarpine or eserine in those chronic cases where operation seems doubtful. I advise its use when there are recurrent symptoms. In prognosis I am guided a great deal by the condition of the iris. My operations have been done with the lance-shaped knife. I consider it of great importance to carefully reduce the edges of the coloboma, not only by external pressure, but also by the use of the blunt probe. I am also careful not to make the operation too peripheral. Peripheral wounds are more liable to cystoid scars.

DR. EMIL GRUENING, of New York, read a paper on

IRIDECTOMY IN GLAUCOMA.

The speaker classified the different forms of glaucoma under the following heads: 1. Acute inflammatory; 2. Chronic inflammatory without visible degenerative changes in the iris; 3. Chronic inflammatory glaucoma with visible degenerative changes in the iris; 4. Simple glaucoma; 5. Intermittent glaucoma, and described cases illustrative of these different varieties.

DR. S. O. RICHEY, of Washington: I do not believe that simple chronic glaucoma is to be entirely a local affection. I think that it is a local expression of a cause to be looked for in the nervous system. I have used eserine with satisfaction in the early stages, but I support it by galvanism applied to the cervical ganglia. In some cases this will enable us to avoid operation.

DR. SAMUEL THEOBOLD, of Baltimore: I have met with one case in which an attack of pronounced acute glaucoma was cut short by the use of eserine.

DR. C. S. BULL, of New York: Eserine is frequently used in too strong solution. A solution of half a grain to the ounce may cause iritis after a single instillation. I never use a stronger solution than this. I often use one as weak as one-tenth of a grain to the ounce.

DR. B. ALEX. RANDALL, of Philadelphia: I can confirm the remarks in regard to the value of weak solutions. In one case of severe absolute glaucoma a solution of $\frac{1}{8}$ grain to the ounce was entirely successful in relieving the pain. It has been used steadily for three years with no recurrence of the severe symptoms, and without the intervention of any inflammatory trouble.

DR. S. P. RISLEY, of Philadelphia: In experimenting with weak solutions of eserine, I have found that a distinct effect was experienced from a solution as weak as one-thirtieth of a grain to the ounce. If this was applied three times a day, it would in two days cause distinct browache. I have seen benefit from weak solutions where stronger solutions failed to give relief.

DR. HENRY D. NOYES, of New York: One point to which my attention was called many years ago is that in certain instances of evident glaucoma with a large amount of refractive error, it has seemed that the aggravation of the glaucomatous disease have been dependent upon the accommodative strain. In operating I have gradually withdrawn from the external peripheral place of incision. I prefer to come closer to the border of the cornea than some do. This involves less risk and is easier of performance.

DR. SAMUEL THEOBALD, of Baltimore: My experience tends to convince one that astigmatism, and particular astigmatism against the rule, is frequently the cause of glaucoma.

DR. ARTHUR MATHEWSON, of Brooklyn: In one case of glaucoma in which iridectomy had been done without asserting the progress of the disease, a large injection of strychnia caused a decided improvement of vision which continued. I have used it in other cases with good effect.

(To be concluded.)

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

Prof. Bouchard's Mixed Method of Treating Typhoid Fever—The Pernicious Influence of Artificial Feeding on Young Children—Dr. Du Castel on the Antiseptic Treatment of Bleorrhagia—Injections of Carbolic Acid in the Treatment of Carbuncle—Soap as an Antidote for Carbolic Acid.

Professor Bouchard has a mixed method of treating typhoid which consists in the application, within certain limits, of antithermic and general antisepsy. General antisepsy is obtained by

mercurial preparations. At the onset only of the fever, during four days, the patient takes 20 pills of 2 centigrams of calomel per day. Balneotherapy is prescribed as follows: As soon as the rectal temperature passes 40° C., cold baths, to the number of eight in the twenty-four hours, should be given. These baths should maintain the body at a temperature of from 37° C. to 37.5° C. If these baths do not sufficiently lower the temperature, the sulphate of quinine should be prescribed. This medicament, according to the experiments of Chantemesse and Widal, is an excellent microbicide. The dose at the commencement should be pushed to 2 grams in the twenty-four hours. This will be gradually diminished, until a temperature of 37° C. in the morning, and 38° C. in the evening is obtained. As regards intestinal antisepsy, M. Bouchard gives the preference to naphthol A, the antiseptic power of which acts more especially on diatases or leucomaines, products of microbial excretions, and the toxicity of which is altogether nil, even at 5 grams per day. The following is M. Bouchard's favorite prescription: Naphthol, salicylate of bismuth, of each, 5 grams to be divided in to ten powders, one of which is to be taken every hour. According to the author, the results of this mixed treatment are most satisfactory. It responds to all the indications.

Professor Bouchard vaunts the application of naphthol in the treatment of that loathsome affection called bromhidrosis. He prescribes it in the form of a solution composed of 1 gram, 50 centigrams of naphthol, and 100 grams of alcohol. He affirms that the foetidity of the sweating of the feet disappeared after a few applications of this solution.

The pernicious influence of artificial feeding on the health of young children, is well known. A statistical report, published in Berlin by M. Richard Boeckh, and which formed the subject of a report by M. J. Bertillon to the Society of Public Medicine, shows that the mortality of infants brought up by the bottle is six or seven times higher (all things being otherwise equal) than that of those nourished by their mother's breast.

This statistic proves that neither the age of the children, nor their legitimate or illegitimate connection, nor the easy circumstances of their parents could explain the difference between the mortality of infants brought up by their mother's breast, and that of those brought up by the bottle. The considerable difference between the two categories of infants (7 and 45 per 1,000 living of each category), is entirely due to the difference of alimentation. It proves also that if the mortality of illegitimate children, at Berlin, is in general double that of legitimate children, it is owing to the fact that the illegitimate children are, more often than the legitimate children, brought up by the bottle.

The opinions of Dr. Du Castel as expressed in a note read before the Société de Médecine Pratique on the antiseptic treatment of blennorrhagia may be resumed as follows: Antisepsy has always for result the maintenance of the urethra in this state of asepsy, which modern medicine seeks to obtain in every cavity which suppurates, as favorable to the cure of suppuration. In a certain number of cases, the antiseptic treatment produces a cure remarkably rapid. It is only in exceptional cases that antisepsy well conducted does not produce a prompt improvement of the inflammatory accidents, and a shorter duration of the acute stage. Antisepsy, practiced early, diminishes the chances of the propagation of the blennorrhagia to the posterior part of the urethra, and renders vesical, prostatic and testicular complications more rare. The following are the antiseptic agents employed in these cases: 1. The sulphate of quinine at 1 per cent., the permanganate of potash at $\frac{1}{1000}$, the bichloride of mercury at $\frac{1}{1000}$, and the biniodide of mercury at $\frac{1}{1000}$ may be utilized, in the form of injections, in the treatment of acute blennorrhagic urethritis, and applied at the commencement of the malady. Momentary contraindications may be met with only in cases of local complications. 2. These agents, which, of themselves, constitute the whole treatment, are superior to balsamic remedies and to all of the procedures of the classical method, as regards rapidity and innocuousness of effects. 3. The preference should be accorded to the bichloride, and perhaps to the biniodide of mercury, the value of which can only be settled by experience.

MM. Arnozan and Lande have cited in the *Journal de Médecine de Bordeaux*, two cases in which injections of carbolic acid had given them very remarkable results in the treatment of carbuncle. In one case in particular, in a woman æt. 65 years, affected with an enormous carbuncle in the back, and the patient appearing to be in a hopeless condition, the authors injected into the cellular tissue of the periphery of the zone inflamed 5 grams of a solution composed as follows: Glycerine, distilled water, of each 15 grams, crystallized carbolic acid 3 grams. These injections were made in five points circumscribing the inflamed region. They represented a total dose of 50 centigrams of pure carbolic acid. The pain caused by the first injection was very violent, but in the evening this subsided, and an evident amelioration was produced. On the evening of the next day, a fresh injection of 30 centigrams only, on three points was made. On the third day, 20 centigrams were injected. On the fourth, fifth and sixth day 10 centigrams were injected. From this moment convalescence commenced and progressed regularly. This case is interesting in more than one point of view. The patient was in a hopeless state when the subcutaneous injec-

tions of carbolic acid were practiced, and it was remarkable to see the rapidity with which the accidents had disappeared. Twenty-four hours after the first injections, the amelioration was notable, twenty-four hours later, the cure of the patient was ensured. The dose at which the carbolic acid was employed equally deserves attention, for, notwithstanding the high dose of 50 centigrams, the phenomena of intoxication which followed, were almost nil. The authors conclude that this case is sufficiently encouraging to render surgeons less timid in the therapeutic applications of carbolic acid, and authorizes, in case of urgency, an energetic intervention.

The *Moniteur Thérapeutique* relates that ordinary soap, or indeed, any soap, is the best antidote for carbolic acid. It must be administered immediately after intoxication, and frequently repeated, until the disappearance of all the toxic phenomena.

A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Dr. Roger S. Tracy's Report to the Board of Health on the Mortality of the City—The Board disseminating among the People a knowledge of the Contagiousness of Tuberculosis.

A preliminary report in relation to the mortality in this city for the year 1888, recently presented to the Board of Health by Dr. Roger S. Tracy, Assistant Sanitary Superintendent, has attracted considerable attention on account of the somewhat surprising deductions which he makes from the results of his investigations. These are as follows: "The death-rate in tenement houses is less than the general death-rate of the city. The death-rate in the large tenement houses is less than in the smaller ones. That while diarrhoeal diseases and diphtheria show a greater death-rate in the larger houses (leaving out the suburban districts, where the conditions are very different), phthisis and pneumonia show comparatively little difference; that difference, however, being in favor of the larger houses. The greatest general death-rate among persons over 5 years of age, the next to the highest death-rate from diarrhoeal diseases and pneumonia, and markedly the highest from phthisis, are in the district south of Fourteenth Street and west of Broadway. The excessive mortality in this part of the city is probably connected with the great number of old houses and the dampness of the soil. These results are much at variance with what was expected. It seems to be sufficiently established that people do not live under such extremely bad sanitary conditions in the tenements as they have been supposed to." The figures which he presents show that while in

1869 the general death-rate was 28.13 and the tenement death-rate 28.35, in 1888 the general death-rate was 26.33 and the tenement death-rate only 22.71.

The way in which Dr. Tracy reaches his conclusions is somewhat as follows: Last year the sanitary police took a census of the tenement house population of the city. The general death-rate, in the estimated population, as just stated, was 26.33, and the fact that the highest death-rate in the tenement house population is only 26, and the general tenement house death-rate being 22.71, would at first seem to indicate that the population of the city has been underestimated and the quoted death-rate is too high, or that all the deaths belonging in tenement houses had not been credited to them; or else that the death-rate is actually lower for the tenement house population than for the rest of the city. It might be that deaths which should have been credited to these tenement houses have not been so credited. The total number of deaths in institutions was 7,774; of this number the former place of residence was ascertained in 3,444 instances, and these deaths have all been credited to the houses in which they had lived. It is evident that the remaining deaths, 4,330, ought not to be credited solely to the tenement houses, as many of them are from out of town, many from boarding-houses and private dwellings, many are immigrants just arrived, and many are old people in homes and almshouses, or infants in foundling or lying-in asylums. It is a fair conclusion, therefore, that the death-rate of the tenement house population is lower than that of the remaining population.

It would seem, then, according to Dr. Tracy, that, so far as the risk of death in New York is concerned, it is better to live in a crowded tenement house than in a brown-stone mansion on Fifth Avenue. It is probable, however, that the greater part of the tenement population, if offered the opportunity, would prefer to take their chances in the Fifth Avenue mansion. There can be little doubt that some mistake has been made in estimating the existing conditions, and that the conclusion mentioned is not justified by the real facts of the case. In commenting on Dr. Tracy's statistics the *New York Medical Journal* says the tenement house death-rate is perhaps given so low because of the inordinately high estimated tenement population; and, of course, the higher the error in an estimated population, the lower must the rate of mortality fall. In the statistics given the total population of the city is placed at 1,526,081, and the tenement population at 1,093,701 in 1888, while in 1869 the total population is placed at 894,419, and the tenement population at 468,493; showing an increase of 625,209 in the tenement population in twenty years. "In other words, if Dr. Tracy's figures are correct," says the *Journal*, "the increase has been almost wholly

in the tenements; the private house classes have grown only 6,453 in twenty years, or only 323 per annum. This is incredible; there have been thousands of houses put up in that time, to say nothing of the great number of beings that fill them. The better, or well-to-do, class, has not been stationary. Stated proportionally, according to Dr. Tracy's data, the rate of increase has been over 133 per cent. in the one class and less than 1.5 per cent. in the other. If our point is well taken, it must be seen that a good deal of what Dr. Tracy says goes for nothing."

It is a fact that when there has been continuous hot weather for a number of days the mortality in New York often mounts up from 600 or 800 to over 1,000 deaths a week, and this increase is almost entirely in the tenement house population, being due to diarrhoeal disease in infants and young children. A reporter of one of our most reliable papers recently accompanied one of the summer corps of the Board of Health's visiting physicians in his house to house inspection in a down-town tenement district; and this is what he saw: "The street was filthy, a fact that the housewives along the thoroughfare attributed to itinerant peddlers of fish and fruit, whom they charged with hiding their refuse stuff in ash barrels. But whatever was the cause, there was engendered a nauseating stench that came up in volumes under the scorching heat of the sun. But filthy and foul-smelling as the streets are, the habitations are more intolerable in both respects. The floors of the dark hallways are covered with dirt, while the walls are grimy with dust and smoke. In these pig-pen alleys half naked children that look as though they had never had a bath in all their lives play together in a half-hearted way, without laughter and almost without smiles. They do not seem to have enough life in their pale little bodies to get up a healthy romp, if such a thing were possible in such an atmosphere. Each of these tenements has a housekeeper, who is generally unclean, unkempt and slovenly. The other women in these houses are usually of the same description as the housekeeper. They seem to have an antipathy to water in any form, and spend much of their time hanging about the doors and gossiping. The rooms in which many of these people sleep beggar description. They are small, badly ventilated, and filled with stifling, foul odors; and what makes it worse is that the apartments are overcrowded to an extent that indicates a great mortality in the event of a contagious disease breaking out." Any one at all familiar with New York tenement house life will acknowledge the correctness of this picture as applied to many districts of the city.

It is a fact, however, that during the last few years much has been done to ameliorate the condition of the poor, and especially to save the lives of the children; and there can be little doubt that

the death-rate among the tenement population has been materially diminished. Each year the Children's Aid Society and the St. John's Guild care for many thousand children, and numerous summer homes among the churches provide fresh air and country pleasures for the poor; while many lives are saved by the summer visiting corps of the Board of Health.

The Board of Health has been doing a very good work in disseminating among the people a knowledge of the contagiousness of tuberculosis and the simplest and most efficient means for the prevention of its spread. In June an able report on this subject was submitted to the Board by the pathologists, Drs. T. M. Prudden, H. M. Briggs and H. P. Loomis, and more recently ten thousand copies of a set of rules to be observed for the prevention of the spread of consumption have been printed for distribution. As this is probably the first instance in which any regulations regarding this disease have been promulgated by the public sanitary authorities, it may be of interest to append them.

1. Do not permit persons suspected to have consumption to spit on the floor or on cloths unless the latter be immediately burned. The spittle of such persons should be caught in earthen or glass dishes containing the following solution: Corrosive sublimate 1 part, water 1,000 parts.

2. Do not sleep in a room occupied by a person suspected of having consumption. The living rooms of a consumptive patient should have as little furniture as practicable. Hangings should be especially avoided. The use of carpets, rugs, etc., ought always to be avoided.

3. Do not fail to wash thoroughly the eating utensils of a person suspected of having consumption as soon after eating as possible, using boiling water for the purpose.

4. Do not mingle the unwashed clothing of consumptive patients with similar clothing of other persons.

5. Do not fail to catch the bowel discharges of consumptive patients with diarrhoea in a vessel containing corrosive sublimate 1 part, water 1,000 parts.

6. Do not fail to consult the family physician regarding the social relations of persons suffering from suspected consumption.

7. Do not permit mothers suspected of having consumption to nurse their offspring.

8. Household pets (animals or birds) are quite susceptible to tuberculosis; therefore do not expose them to persons afflicted with consumption; also do not keep, but destroy at once, all household pets suspected of having consumption; otherwise they may give it to human beings.

9. Do not fail to thoroughly cleanse the floors, walls and ceilings of the living and sleeping rooms of persons suffering from consumption at least once in two weeks.

P. B. P.

Expenses of Officers of Sections.

Mr. Editor.—The following letter is one of several, of similar import, that I have received during the last six weeks :

"N. S. DAVIS, M.D.

Dear Doctor.—How are the necessary expenses of the various Sections—expenses for stationery, etc.—to be met? I hope arrangements will be made for meeting them out of THE JOURNAL fund of the Association. The Secretaries of Sections have already been put to a large expense for printing, correspondence, etc.

Yours truly,

A. B., Secretary of Section."

Some of these letters came to hand a little before the meeting at Newport, when I was too much occupied to take time to examine closely the Constitution and By-laws relating to the subject, and gave for answer, that if no provision already existed for meeting the necessary expenses of the Secretaries of the Sections in executing their official correspondence, the defect could be remedied by proper action of the Association while in session at Newport.

As no action was taken upon the subject at the recent meeting, and the above letter has reached me since, I think it proper to call attention to the following clause of the Constitution [Section VI. Funds and Appropriations], "The funds may be appropriated for defraying the expenses of the Annual Meetings, including the necessary expenses of the Permanent Secretary in maintaining the necessary correspondence of the Association; for publication; for enabling the *Standing Committees* to fulfil their respective duties, *conduct their correspondence*, and procure the materials necessary for the completion of their stated annual reports," etc.

This has constituted a part of the Constitution since the adoption of that instrument, in 1847, and for the first thirteen years all the scientific and professional work of the Association was done by *Standing Committees* on Medical Education, Medical Literature, Practical Medicine, Surgery, Obstetrics, Epidemics and Hygiene, etc., and it plainly provided for defraying the expenses incurred by such committees in conducting their necessary correspondence. When, in 1860, all the work of these committees was transferred to the several *Sections*, this provision of the Constitution certainly became as applicable for the payment of the necessary expenses of the Secretaries in conducting the proper correspondence of the Sections, as it had previously been to that of the *Standing Committees*.

It would be necessary for the Secretary of the Section to keep an accurate account of such expenses and to render a bill of items to the Treasurer of the Association, which when paid would remain as a proper voucher in his hands.

Yours truly,

N. S. DAVIS.

Chicago, Ill., July 29, 1889.

BOOK REVIEWS.

MATERIA MEDICA AND THERAPEUTICS, FOR PHYSICIANS AND STUDENTS. By JOHN B. BIDDLE, M.D., late Professor of Materia Medica and General Therapeutics in the Jefferson Medical College, Philadelphia. Eleventh Edition, Revised and Enlarged, with Special Reference to Therapeutics and to the Physiological Action of Medicines. By CLEMENT BIDDLE, M.D., U. S. N., and HENRY MORRIS, M.D., Fellow College of Physicians of Philadelphia, etc. Philadelphia: P. Blakiston, Son & Co., 1889. Pp. xix-607. Price, \$4.25.

The changes which are constantly being made in Materia Medica by the introduction of new remedies and the abandonment, partial or entire, of others, necessitates frequent revisions of the standard works of this class of books. When these are of a voluminous and exhaustive character the purchase of revised editions is often a matter of very considerable expense; but there are, fortunately, less pretentious works which serve an admirable purpose while recommending themselves to the physician, by reason of their comparative inexpensiveness. The present edition of Biddle's well-known treatise is of such a character. It is a well balanced book and is thoroughly modern. Shorn of all that is redundant in the way of botanical descriptions and explanations of pharmaceutical and chemical preparations, and presenting concise accounts of the principal physiological actions of the remedies described, it affords one most valuable and entertaining reading. It does not, of course, take the place of the cyclopædic treatises on materia medica which aim at giving complete accounts of the multitudinous experiments which have been conducted with painstaking care in the various countries of the world; it does not even tell us much of what can not be accomplished by remedies; but it does give, in concise form, the principal physiological actions and therapeutical applications of the more valuable remedies at our command. Among the newer remedies introduced in this edition we find hypnone, urethan, papaya, adonidine, strophanthus, sparteine, morrhual, iodol, lanolin and saccharin; while a new chapter has been added on the subject of antipyretics, in which the phenyl derivatives, such as acetanilide, resorcin, hydroquinine, pyrocatechin, salol, naphthaline, pyridine, kairine, thalline, antipyrin, etc., have been well treated.

PAPERS READ BEFORE THE MEDICO-LEGAL SOCIETY OF NEW YORK. Third Edition (First Series). New York: Medico-Legal Journal Association. 1889.

Casper's great work on forensic medicine is to be found in the libraries of most of those who

profess any extensive knowledge of this department. Notwithstanding its author has been dead for more than twenty-five years, age appears not to have made it the less valuable. But it is not given to all branches of science to grow old so slowly, and the wisdom of the Medico-Legal Society, of New York, in reprinting all the papers which have been read before it, is apparent. The present volume, or first series, includes papers read in the years 1868-'69-'70 and '71. In Dr. Jas. J. O'Dea's essay regarding "The Sphere, Rights and Obligations of Medical Experts," he says: "Next to slander, unreasonable expectation is the greatest foe to character." If physicians acted wisely they would insist upon drawing a sharp line of distinction between the medical witness and the medical-expert witness. Expert testimony begins where ordinary testimony ends. The expert witness does more than bear testimony to facts, he delivers opinions not only on what he himself has observed, but also on what ordinary witnesses have stated under oath.

The observation of facts, listening to their recital, weighing and classifying them after due examination, and so finally rising to a conception of the general principle of which they are the expression, constitutes the task of an expert witness. Stating this conception in appropriate language is the delivery of an opinion. According to Plato, an opinion is at best but a mean between knowledge and ignorance; and the more generally it is understood in this light, the better it would seem to be for all.

To prevent experts from usurping a power which they might be tempted to use for the benefit solely of the party calling them, it is suggested as the proper remedy that the court alone should call and examine medical experts. The author's view in this respect is supported by Prof. Ordonaux. Under the usual methods the expert is practically pledged to support the side that calls him, or if not, the council will lead or force from him an opinion in the desired direction, using all his skill to bend it to the cause for which he contends, or failing, will beat down or belittle it in the estimation of the jury. Would it be possible to reach a rational or honest opinion under such circumstances, when an opinion is at most but an approximation to the truth, often not far removed from ignorance, and should never be ventured except the opportunity be given to arrive at it in a way that is intellectually honest.

A GUIDE TO THERAPEUTICS AND MATERIA MEDICA. By ROBERT FARQUHARSON, M.P., M.D., Edinb. Fourth American, from the Fourth English, Edition. Enlarged so as to include all preparations officinal in the U. S. Pharmacopœia, by FRANK WOODBURY, A.M., M.D. Philadelphia: Lea Brothers & Co. 1889.

This work, well known to students and prac-

tioners, preserves the same form which has characterized it in its former editions, although it has been practically rewritten and very considerably enlarged. In the hands of its author it has been made to accord with the British Pharmacopœia of 1885. There have been seventeen omissions, and the author would gladly have excluded a greater number of useless articles which still receive official sanction. There have been 113 primary articles and their preparations added. The terminations of the names of alkaloids has been made uniform by adopting the English *-ine* and Latin *-ina*, *i. e.*, codeine and codeina. Both the metric and apothecaries' systems are used side by side throughout the book.

The American editor has added some sixty pages at the end of the volume, including a few new non-official preparations and an Epitome of the National Formulary issued by the Committee of the American Pharmaceutical Association. The reader will look in vain for such substances as antifebrin, strophanthus, peroxide of hydrogen, salol, lanolin, naphthol, sulphonal, saccharin, and others. However, this work has made its reputation, and will hold it. It may have been prudent to leave out many of the drugs now under investigation, but we usually look for new light upon them when a new book or a new edition of an old one appears.

SYNOPSIS OF HUMAN ANATOMY. Physicians' and Students' Ready Reference Series. By JAS. K. YOUNG, M.D. Philadelphia and London. F. A. Davis, publisher. 1889.

This volume is one of a series, future volumes of which are to appear from time to time. The author states in the preface the object of the work, which it would seem is intended to fill a want rather more extensive than its title and character justify.

We hope that students will not depend for their knowledge of anatomy upon any synopsis of the subject; it would be a retrogressive step anything but desirable. Anatomy is a science, and the presentation of its bare outlines serves only to detract from it as such. A student who has a true scientific spirit would never be satisfied with any short or condensed presentation of this most important subject. It is unfortunate indeed for the science of anatomy that it tempts men to present it in this way. As a Synopsis of Anatomy the book is accurate and excellent, but as a substitute in the schools for other and larger works, we cannot recommend it; as a short-cut for the acquirement of a broad science we deprecate it. It may facilitate the already too rapid mode of acquiring a knowledge sufficient to pass an examination, and there are many who, not being in hearty sympathy with the scientific spirit of the profession they study, are glad to avail themselves of abridged volumes, even though

they lack the life and inspiration which no true science ever wants, and which its devotees must and always will find in it. As a work of ready reference its value depends upon its accuracy, completeness and the excellence of its arrangement; we do not hesitate to commend these.

MISCELLANY.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.—At a meeting of the Committee, held at Pittsburgh, July 15, the following resolutions were adopted:

WHEREAS, The annual meeting of the Medical Society of the State of Pennsylvania, which convened at Pittsburgh, June 4, 1889, was adjourned until the first Tuesday of the following September, by reason of the distress and confusion caused by the flood in the Conemaugh Valley; and

WHEREAS, It is the opinion of many prominent members of the Society that a successful meeting of the Society cannot be held during the present calendar year, for many reasons, the chief of which is, that the sorrow and suffering caused by the recent great calamity still oppresses the entire community to such an extent as to interfere with an early meeting; therefore, be it

Resolved, That the meeting of the Medical Society of the State of Pennsylvania, which was adjourned to meet September 3, 1889, be still further adjourned until the second Tuesday of June, 1890.

AN IMPORTANT DECISION.—In the case of the People vs. Blue Mountain Joe, the Supreme Court of Illinois held that section 11 of the Medical Practice Act, which prohibits itinerant venders of medicines, nostrums, etc., from operating in the State, to be valid. The point was raised in the present case that this section was not covered by the title of the Act, and therefore invalid. The last General Assembly attempted to repeal the Act, it being thought invalid, but this decision sustains the Act in every particular.

THE BRAINARD DISTRICT MEDICAL SOCIETY, of Central Illinois, met at Delavan, Ill., July 25. An interesting meeting was held. The leading paper presented was on the "Etiology of Tubercular and Scrofulous Disease," by the President, Dr. S. T. Hurst, of Greenville. Drs. N. Holmes and A. G. Servoss were appointed essayists for the October meeting, with the topics "Hysteria" and "Intermittent Fever" respectively.

ENCOURAGING SCIENCE.—The Vermont Microscopical Association has just announced that a prize of \$250, given by the Wells & Richardson Co., the well-known chemists, will be paid to the first discoverer of a new disease germ. The wonderful discovery by Prof. Koch of the cholera germ, the cause of cholera, stimulated great research throughout the world, and it is believed this liberal prize, offered by a house of such standing, will greatly assist in the detection of microorganisms that are the direct cause of disease and death. All who are interested in the subject and the conditions of this prize, should write to C. Smith Boynton, M.D., Secretary of the Association, Burlington, Vt.

BOOKS RECEIVED.

Book on The Physician Himself, and things that concern his Reputation and Success. By D. W. Cathell, M.D., Baltimore, Md. Philadelphia: F. A. Davis, 1889. Transactions of the Southern Surgical and Gynecological Association. Vol. 1. Session of 1888. Birmingham, Ala.: Caldwell Printing Co.

PAMPHLETS RECEIVED.

A Year's Record of Seventy-five Successful Cases of Abdominal Section. By B. Curtis Miller, M.D., Charleston, W. Va. (Reprint.)

Physiological Basis of Objective Teaching. By Marshall Calkins, A.M., M.D., Springfield, Mass.

Two Suggestions for Improving the Operation of Excision of the Knee-joint for Strumous Disease. By A. G. Miller, M.D., F.R.C.S., Ed., Edinburgh, Scotland. (Reprint.)

Twelfth Report of the State Board of Health of Wisconsin for 1888.

LETTERS RECEIVED.

Dr. N. O. Lane, North St. Paul, Minn.; Dr. S. N. Sims, St. Joseph, Mo.; Gladstone Lamp Co., New York; G. & C. Merriam & Co., Springfield, Mass.; Dr. D. B. Wise, Mt. Eaton, O.; I. Halderstein, New York; Dr. A. L. Hummel, Philadelphia; Druggist's Circular, New York; Dr. J. B. Roberts, Philadelphia; Dr. Herbert Judd, Galesburg, Ill.; Dr. T. D. Crothers, Hartford, Conn.; Dr. J. A. Blanchard, Umatilla, Fla.; Dr. J. Barton Hopkins, Philadelphia; Dr. Robt. Newman, New York; Dr. W. B. Atkinson, Philadelphia; The Levitype Co., Chicago; Dr. L. Elliot, Washington; Dr. S. M. Horton, Fort Adams, R.I.; Dr. W. B. Hopkins, Philadelphia; Dr. Walter Channing, Brookline, Mass.; Battle & Co., St. Louis; Dr. K. Meller, Lincoln, Neb.; Dr. A. F. Brock, St. Louis; Dr. C. S. Wood, New York; Dr. McPherson, New York; The Analyst Publishing Co., New York; Dr. J. F. Jenkins, Tecumseh, Mich.; Dr. Dewees, Salina, Kan.; Dr. J. V. Shoemaker, Philadelphia; Dr. J. B. Ingals, Meriden, Ia.; Dr. Harold N. Moyer, Chicago; Dr. Henry O. Marcy, Boston; Witt-hoff, Marsilly & Co., New York; Dr. Thomas L. Bennett, Kansas City, Mo.; Dr. William Carroll, New York; Gustave E. Stechert, New York; Dr. Henry Smith, Philadelphia; Dr. J. L. Bland, Houma, La.; Dr. E. S. Elder, Indianapolis, Ind.; The Provident Chemical Works, St. Louis; Dauchy & Co., New York; Rees Printing Co., Omaha, Neb.; Dr. H. H. Powell, Cleveland, O.; Dr. L. S. Trowbridge, Detroit, Mich.; Fred. C. Van Horen, New York; Dr. N. S. Watson, Matteawan, N. Y.; Dr. J. M. Emmert, Atlantic, Ia.; Dr. C. W. Richards, Washington; Dr. A. F. A. King, Washington; Dr. Joseph E. Root, Hartford, Conn.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from July 27, 1889, to August 2, 1889.

Capt. William R. Hall, Asst. Surgeon, is granted leave of absence for ten days. Par. 5, S. O. 80, Hdqrs. Dept. of Dak., July 27, 1889.

Capt. Samuel Q. Robinson, Asst. Surgeon U. S. Army, leave of absence for two weeks granted by par. 11, S. O. 165, from these Hdqrs., is hereby extended ten days. Par. 8, S. O. 172, Hdqrs. Div. Atlantic, July 30, 1889.

By direction of the Secretary of War, so much of par. 1, S. O. 159, A. G. O., July 12, 1889, as directs Capt. Louis Brechemin, Asst. Surgeon, to return to his station at the close of the encampment of the Illinois National Guards, is amended to direct him to report in person not later than August 20, 1889, at Ft. Robinson, Neb., for duty at that place. S. O. 174, Hdqrs. of the Army, Adjutant General's Office, Washington, July 30, 1889.

First Lieut. Robert R. Ball, Asst. Surgeon, extension of leave of absence granted in S. O. 167, July 22, 1889, from this office, is further extended ten days. Par. 23, S. O. 169, A. G. O., Washington, July 24, 1889.

First Lieut. H. S. T. Harris, leave of absence granted in S. O. 140, A. G. O., June 18, is further extended two months. Par. 9, S. O. 176, A. G. O., August 1, 1889.

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ADDRESSES.

THE NEED OF DISCUSSING OPHTHALMIC SUBJECTS.

An Address delivered before the Section of Ophthalmology of the American Medical Association, June 25, 1889.

BY GEO. E. FROTHINGHAM, M.D.,
OF ANN ARBOR, MICH., CHAIRMAN OF THE SECTION.

It is my pleasant duty, respected colleagues, to welcome you as you commence the second decade of work in this Section. Believing that those of like tastes and pursuits can develop best by occasional reunions and interchange of views, the ophthalmologists of the American Medical Association met and organized this Section at the meeting in Buffalo, in 1878. Drs. X. C. Scott, of Cleveland, Eugene Smith, of Detroit, and Dudley S. Reynolds, of Louisville, were the originators of the movement. Dr. H. Knapp, of New York, was elected Chairman, and Dr. X. C. Scott, of Cleveland, was made Secretary. The first meeting of the Section for actual work was at Atlanta, Ga., May, 1879.

The late Dr. E. Williams, of Cincinnati, was among those who contributed papers for this meeting, and he was made Honorary President of the Section. He has been called the father of specialism in this country. He was the first man ever appointed to this special chair in any college this side of the Atlantic. He saw the need of specialism at a time when only the strong man dared to profess it, and against the advice of the majority of his friends, visited the great European cities where ophthalmology was then cultivated. After nearly three years of study with such great teachers as Graëfe, Helmholz, Arlt, Jaeger, Desmarres, Bowman, Critchet and others, he returned to this country to become the pioneer in this specialty. Of this great and good man we have been bereaved since our last meeting. He died Oct. 5, 1888, at Pittsburgh, Pa., at the age of 66. He was engaged in ophthalmic practice in Cincinnati, for more than a third of a century.

A memorial of his life and work will be presented by the proper committee to the Association at some one of the general sessions, but as his labors in this department of medicine, and in

establishing this Section of the Association, causes us to feel his loss more perhaps, than others do, it seems proper in this connection, to give this brief notice of his life, and pay this tribute to his memory.

At first it was found necessary to include with ophthalmology, otology and laryngology, and the resolution by which the Section was established, called for a change in the organization of the society, by which there was added to the five then existing Sections, a Section for Ophthalmology, Otology and Laryngology, which should be known and designated as Section 6.

For ten years the laborers in these last named specialties met with this Section, and contributed to its success. It was with much regret that we yielded to the necessity of providing more time for the reading and discussion of papers, and parted company with these esteemed co-laborers, who last year established a new Section, in which they will work for the first time during the present meeting of this Association.

During this meeting the work of our Section, will, for the first time in its history, be confined wholly to the consideration of ophthalmic subjects. From the programme placed before us, it will be shown that there is an abundance of work, and if our time is not fully occupied in profitable debate it will be our own fault. We have as many papers to be read and considered at this meeting of the Section as we have usually had before, and upon subjects of as great interest, and requiring as much attention as when our work embraced a wider range. This illustrates the fact that science grows deeper as its boundaries extend, and that a still further subdivision of labor becomes necessary in order to carry its work forward with the greatest success.

Fear has, occasionally, been expressed, that with such limited fields of labor in the different Sections, the subjects introduced will become hackneyed, and lose their interest, and that discussion of them will cease to be either profitable or pleasing. But discussion was never more called for in ophthalmic subjects than at the present time. No subject should be abandoned until the ultimate truth is reached, and uniformity of views are established, however hackneyed it may seem to be. We should eschew no scientific sub-

ject as trite while any of its principles are vague and unsettled.

We shall see, as we continue the work of these meetings, that there are enough mooted questions to engage all our attention, and that however extensive our wisdom or experience, it will be sufficiently taxed in attempts made to reconcile the conflicting views that may be presented.

Dr. Hotz, in his address last year, very cogently called attention to the fact that we were challenged to defend many of the doctrines that we had supposed to be very firmly established. The record of the past year has not been such as to change the state of affairs then existing. Even the value of specialism, itself, and the right of its followers to exist as a separate and independent class of practitioners, is still called in question. The qualifications that should entitle one to the right of being regarded as a specialist is also still a mooted subject. Much of value has been written upon these subjects during the past year, and the relation that should exist between the specialist and general practitioner, and also the kind of training and the qualifications that *each* should have, have been discussed. This is labor in the right direction. There are no more important subjects that can engage our attention than these, and upon their correct solution depends the future progress of ophthalmic science and art more, perhaps, than upon any others. There is no disguising the fact that the lack of sufficiently extensive mutual sympathy, and of coöperation between the family physician and the specialist is not only one of the great drawbacks to the practical usefulness of specialism, but one of the greatest obstacles to its scientific progress.

I need not enter upon a defense of specialism before this audience, composed, as it is, of those who devote themselves to the cultivation of one of the most successful of them all. You, who have limited, to a great extent, your investigations to this one small organ, know how necessary it is, to limit judiciously the field of observation in order to interrogate nature successfully, and learn from her, her secrets.

In every other department of human knowledge the necessity of such a division of labor has long been recognized. In medicine, however, it is even now grudgingly admitted, though it has furnished such abundant proof as to its value and necessity. Notwithstanding the victories won, and honors achieved by specialism, they are too recent, and too grudgingly admitted to warrant its friends in ceasing their efforts to secure for it a just recognition.

It is now more than a hundred years (1773) since Joseph Barth was appointed lecturer on ophthalmic surgery in the University of Vienna, and from this we may justly date the beginning of modern scientific ophthalmology.

Getting his first inspiration, as Fusch tells us,¹

from a few lectures delivered by Wenzel, who had been called from Paris to Vienna, to settle a dispute between some physicians as to the nature of an eye affection, in the case of one of the great ladies connected with the Court of Maria Theresa, he entered upon this new field with so much enthusiasm that he soon became the most distinguished of its cultivators. He selected Beer as his assistant, and, having imparted to him his enthusiasm, he left him to continue the work he began, and Vienna soon became the centre of modern ophthalmology. Students flocked to this school from all parts of Europe. Yet so slow was the medical world to comprehend the advantage to be derived from such special study and teaching, that it was not until 1804 that the London Ophthalmic Infirmary was established, and it was not thrown open to students until 1810. In America no special instructor in ophthalmology was appointed until 1860, while in Paris, from which the kindling spark went forth, specialism was so violently opposed by the medical faculty of the University, that no teacher of this branch was appointed until 1879.

It is not two score years since in our own country, any man who attempted to limit his practice to a specialty, was ostracised by the profession, and often had to drop it and again join the ranks of the general practitioner. Nor is this spirit of opposition to specialism yet extinct or confined in its manifestation to those without influence. During the past year one of the best known medical writers in an editorial article in a prominent medical journal, revived the old antagonism, and declared that, "The specialist must become a hand-worker, plying his art under the direction of the physician, who calls to his aid the manual dexterity which the one has attained by limiting his practice to a single disease or a single operation." . . . "There is a necessity," he declares, "for an authority superior to the specialist, and the consequent limitation of the latter to a subordinate place." "Is the general practitioner, he asks, "qualified to fulfil this duty? If not, he ought to be so qualified. He *must* be if he expects to hold his proper place in the profession."²

This writer would seek to degrade all specialism to the position surgery once occupied—the position of a mere handicraft. The surgeon was at one time allowed to do his work only under the direction of the physician.

By following the lead of Hunter, however, the surgeon has achieved for himself a more independent, honorable and useful position. He decides now for himself what needs to be done, and executes it only when his own judgment dictates it. Surgeons have accomplished this by

¹History of Ophthalmology in Vienna. See Med. Times and Gazette, 1885, page 692.

²Dr. William F. Vaughn, in the Philadelphia Medical Times, Dec. 15, 1888, page 204. Editorial Article on Specialism.

laying a proper foundation in the fundamental sciences, and in general medicine also, before limiting their practice to surgical cases alone. The great surgeon must first have been a good general practitioner. By adopting this principle of education, surgery, from occupying an inferior position, its followers being mere "hand-workers" under the directions of the general practitioner, has won the first place in medical rank, and now surgeons even treat their old masters often as inferiors.

The most able articles that have been written within the last year on the subject of specialism, and its relation to general medicine, have advocated a similar training for all specialists, with a view to elevating their position in the profession, and enabling them to accomplish the most for science.³

It is on this principle, it is advocated, that ophthalmology must seek to maintain its position and advance as it should. Sir Henry Power struck the key note of more recent sentiment on this point, in 1885, when he said: "If the ophthalmic surgeon of the future is to maintain the reputation and position of his predecessors in this branch of the profession, it appears to me that two things will be necessary: first, that he should possess a sound general knowledge of medicine and surgery, and second, that he should have a good preliminary training in mathematics and physics. . . . 'I hold,' said he, 'that no man should commence ophthalmic practice without long preliminary work in general or dispensary practice, or in the wards of an hospital, and I venture to dwell strongly upon it, because I think there is a tendency amongst the younger members of the profession to regard ophthalmic practice as an easy means of obtaining a livelihood, which is at once less troublesome, clean, and more satisfactory than any other branch of surgery.'"⁴

His remarks are worthy of consideration, and they seem to be endorsed by most modern writers, and we can do very much to advance ophthalmology by using our influence to control education so that those who come to the study of medicine shall have first received a thorough training in mathematics, physics and the physical sciences, and, that those who enter upon ophthalmic practice, shall first have had an adequate experience in the practice of general medicine and general surgery.

The ophthalmologist must answer, in some degree, to the definition some one has given of a specialist, *i. e.* "One who knows something about everything and everything about something." I commend this subject to the considera-

tion of ophthalmologists as worthy of candid discussion, and demanding a fixed policy and concert of action.

Though no great and brilliant discovery, or opening of any especially new field of research has characterized the history of ophthalmology for the past year, yet in every direction there has been patient, successful and continued labor, and it is by such, that the greatest results have always been accomplished in any department of human thought. It would take some pages of manuscript even to *name* the great army of workers, who have contributed their mite to the common treasury of advancing knowledge, and to do full justice in the way of reviewing their labors would occupy an undue proportion of your time.

Not only have the anatomy and physiology of the eye received due consideration, but almost every disease of the eye has been written upon. Not only have the special journals devoted to ophthalmology been filled with interesting matter, but the journals devoted to general medicine have teemed with valuable articles on ophthalmic subjects, in which either the investigations and experiences of the writers have been recorded, or theories of practice have been discussed. Ophthalmophotography, refraction and school work, detachment of the retina, diseases of the optic nerve, cataract, and the whole catalogue of diseases have been thus considered. Perhaps more attention than usual has been paid to the relation between eye symptoms and diseases, and diseases of the brain and spinal cord. Two papers on our programme will bring these subjects before you, and open for discussion the value of recent observations.

There is an old resolution of the Association to the effect that it shall be the duty of the Chairman of each Section to give an address setting forth the progress for the year in the department of medicine represented by his Section.

This resolution was adopted when the number of Sections was limited to four or five, and the addresses were delivered at the General Meetings of the Association, and not, as now, before the members of the Section only. This resolution has, I think, been generally disregarded during the past few years, perhaps because of the impossibility of fully complying with its requirements. Saying nothing of the numerous subjects that would require attention, and to properly discuss which would extend such an address to an unbearable length, we may ask what *one* man shall presume to decide for you what is progress and what is not? Your Chairman may think certain steps are in the line of progress, but this Section may, after full discussion, think they are retrograde.

Even a return to the old methods is advocated by some as in the line of progress, and this advocacy comes from some who are regarded as among

³See article "On the Relation between the General Practitioner and the Consultant, or Specialist," by S. Duncan Bulkley, A.M., M.D., in "Jour. of Am. Med. Association," Feb. 2, 1889, page 155, also, "The Family Physician," by Andrew H. Smith, M.D., Harper's New Monthly Magazine, April, 1889, page 726.

⁴Med. Times and Gazette, 1885, Vol. 3, page 161.

the leaders of thought in our specialty. This is notably true in regard to the operation and after-treatment of cataract.

It is now more than a quarter of a century since Mooren first performed iridectomy as a preliminary measure to flap extraction. The procedure was soon adopted by Von Graefe as a step of his modified linear extraction. The percentage of losses was immediately and greatly lessened, and it has continually decreased since the general adoption of that method of operating. Indeed, it has come to be regarded as one of the great advances in ophthalmic surgery. To-day we are urged to return to the old method. We are assured that iridectomy is an unnecessary mutilation, adding to the dangers and complicating the extraction. "*That the simple extraction is not only the best, but also the safest method of removing cataract.*" That the iris spread out as a *velum interpositum* between the corneal section and ciliary body, protect this, the most susceptible part of the eye, from the deleterious substances that may enter through the wound."⁵ Statistics have been accumulating during the past year in support of these views that challenge our attention, and demand of us that we discuss anew this old and, as once supposed to be, hackneyed subject. With Carter, and the majority of others who have had experience with both methods of operating, advising the operators to retain the iridectomy as an important step in the operation, while Sweigger, Gayet, Galezowski, Wecker, Knapp and others advise simple extraction, is it a wonder if the beginner hesitates which method to try, confused and discouraged by conflicting opinions regarding the proper operative procedures to be adopted in this old operation, which in its perfection and marvellous success was considered one of the crowning operations of surgery.

But the beginner's perplexity will not end with the operation alone. One author of extensive experience⁶ will tell him to bandage both eyes and keep his patient reasonably quiet after the operation. Another operator of large experience will tell him he need only to close the lids of the operated eye with a little plaster and allow the patient to walk about and use the other eye at pleasure. One will lead him to think that his patient may walk five miles immediately after a cataract extraction without increasing the danger.⁷ Another of very great experience warns him not to follow such advice.⁸ One will tell him that if any cortical matter has been left in the eye he should begin the instillation of atropine after four or five days.⁹ Another warns him, from experience, to avoid such

instillation, as it is likely to excite a glaucomatous condition under these circumstances.

But we have not time to mention all the conflicting directions the anxious inquirer will find regarding even this one disease and its treatment. The subject of cataract is, then, not trite—it is still a live and debatable one.

Nearly as much discord prevails regarding squint and its treatment.

Although since Dieffenbach made the first operation for the cure of convergent strabismus, in 1839, the subject has been a prominent one among ophthalmologists, yet no sufficient uniformity of views exist in regard to its pathology and treatment. And when at the meeting of the American Ophthalmological Society in 1885, the subject of squint and its treatment came up for discussion, scarcely any two members had the same opinion upon the subject. This diversity of opinion existed upon all the important principles connected with the topic; whether or not there exists such a thing as *amblyopia ex anopsia*; whether it is possible to cure converged squint by the use of atropia and properly-fitting glasses; whether early operations should be performed; and whether the vision of the squinting eye is improved by an operation. Some thought the operation for strabismus was too frequently performed, and that it ought often to be postponed or not performed at all. Others thought if there was anything known with certainty it was how to treat strabismus. Dr. Roosa and others have added somewhat to the statistics and discussion of the subject since then, but none of the questions then the subject of dispute have been settled as they should be. They are all yet open to discussion, and only by further collection of statistics and thorough discussion of all the observed facts, can the truth in regard to them be arrived at and accepted.

How shall we treat hypermetropia, and the resulting asthenopia? This question seemed quite well settled more than a score of years ago by the masterly work of Donders, yet to-day no sufficiently definite rules have been agreed upon and formulated for the guidance of those who are beginners and look to the authorities for light. As a recent writer truly observed, "If we ask how much of the hyperopia should be corrected? the answers exhibit a most befogging diversity of opinion."¹⁰ One so high in authority as Landolt, would allow a patient to use two-thirds or three-fourths of his dynamic refraction. Others declare from experience that this cannot be tolerated by the patient without continued asthenopia. Some will advise full correction of the Ht. Others only partially correct the Ht. Here again the greatest diversity of opinion is experienced as to how large a portion of the Ht. shall be corrected and how much left uncorrected. The rules which

⁵ H. Knapp in Archives of Ophthal., March, 1889, p. 11.

⁶ Carter, British Med. Jour. Also see Am. Jour. Ophthal., Jan., 1889, pp. 27 and 28.

⁷ Prof. W. Cheatham, Jour. Am. Med. Association, Nov. 17, 1888, p. 717.

⁸ E. P. Drake Brockman, in Ophthalmic Review, Nov., 1888, p. 334.

⁹ Carter. See Am. Jour. Ophthal., Jan., 1889, p. 29.

¹⁰ W. F. Coleman, M.D., Jour. Am. Med. Ass'n., Dec. 29, 1888, page 903.

this writer¹⁰ has culled from the common textbooks show the need of further discussion of even this hackneyed subject that some standard rules may be adopted, and the beginner may learn more nearly the ultimate facts from the authors, and not have to acquire them after so many doubts and mistakes in his early practice.

About twenty years ago Von Graefe announced his discovery of iridectomy as a cure for glaucoma. This disease had hitherto been regarded as incurable. For many years the profession thought we had nearly reached the ultimate facts in our knowledge of the pathology of glaucoma and the means of cure. But now those of extensive experience declare that "The pathogeny of this disease is still badly defined, and the therapy is not less uncertain; that neither iridectomies, myotics, nor even scleratomies give any certain results."¹¹ The subject of glaucoma is not worn out. It needs further observation and further earnest discussion to get at the ultimate facts and establish the scientific principles of its pathogeny and treatment.

Shall we enucleate an eye during panophthalmitis? How differently are we answered. How positive are some that we ought to do so. How severely is the practice condemned by others. So imperative is the dictation that a German oculist once apologized to a medical society for having twice so operated during such a condition, though with the best success, stating that when he performed the enucleations he did not know of von Graefe's teaching on the subject. Thus while following the dictates of his reason he had unwittingly offended the dictum of authority.¹² Surely this subject is not only still open to discussion, but needs it very much.

Shall we enucleate or eviscerate? This is not yet settled beyond dispute, though enucleation still holds its own as not only the safest but the most speedy cure of those cases in which both are urged by their advocates for preference.

Through what medium or influence is sympathetic ophthalmia produced? The question seemed settled a few years ago, and the ciliary nerves were almost universally recognized as the medium through which the morbid condition was set up in the sympathizing eye. Recently it is claimed that the lymph channels carry pathogenic organisms from the diseased to the healthy eye, and that it is by this agency that sympathetic disease is induced. Still others believe that both these agencies are at work in the production of the disease, and if the question should be called up here the advocates of each of these theories would probably be upon their feet, each sure of his ground and asking for a hearing.

But I might go on to the most tiresome extent,

and then fail to mention all the subjects of dispute.

What few instances I have brought to notice might seem to imply that ophthalmology is one of the most unsettled branches of medicine, instead of being, as it is, the department most nearly approaching a fixed science.

In general practice we find, in the same way, the profession is urged to return to old methods, as for instance the calomel treatment for typhoid fever,¹³ which not long ago was abandoned as a most pernicious treatment.

Not long since, a reviewer of general therapeutics, regarding this unsettled state of things, was led to make the following statements concerning that department of medicine: "To establish therapeutic facts the profession clings as with the heart and hand of one man; clings with a desperation and unanimity whose intensity is the measure of the unsatisfied desire for something fixed. Yet with what a Babel of discordant voices does it celebrate its two thousand years of experience."

"This is so well known that it seems superfluous to cite examples of the therapeutic discord; and one only shall be mentioned, namely, rheumatism. In this disease bleeding, nitrate of potassium, quinine, mercurials, flying blisters, purgation, opium, the bromides, veratria, and a host of other remedies, all have had their advocates, clamorous for a hearing; and above all the tumult are to be heard the trumpet-tones of a Chambers, 'Wrap you patients in blankets and let them alone.'

"Experience is said to be the mother of wisdom. Verily she has been in medicine a blind leader of the blind, and the history of medical progress is a history of men groping in the darkness, finding seeming gems of truth one after another, only in a few minutes to cast each back to the vast heap of forgotten baubles that in their day had also been mistaken for verities. In the past there is scarcely a conceivable absurdity that men have not tested by experience and for a time found to be the thing desired. In the present homœopathy and other similar delusions are eagerly embraced and honestly believed in by men who rest their faith upon experience."¹⁴

The truth of some of these remarks cannot be gainsaid, but while it is granted that those who "rest their faith" upon their individual experiences alone, may be led into any conceivable absurdity it should be remembered that these experiences taken collectively furnish the material from which to glean scientific truths. It is by discussing them, and submitting them to the intellectual process of combination and comparison that those principles are deduced which constitute scientific progress.

¹⁰ Galeszowski, *Med. Analectic*, Feb. 7, 1889, page 63.

¹² Manthner, *Sympathetic Diseases of the Eye*, p. 160. (Webster & Spalding's Translation. Wm. Wood & Co., 1881.)

¹³ Urged by Trube, Wunderlich, Liebermeister and others.

¹⁴ H. C. Wood, in *Preface to Therapeutics and Mat. Med.*, first edition.

Even the personal experience which this writer has referred to, as furnishing to the homœopathist facts which still further confirmed his delusion as to the efficacy of his remedies and mode of cure, also furnished the scientific physician with facts that enabled him, by discussing them and comparing them with the results obtained by other methods, to discover the natural history of many diseases, and to realize the disturbing and injurious effects of many established modes of treatment. He was thus led to realize more fully the agency of that *vis medicatrix naturæ* to which the homœopathist's success could only be ascribed, since, reasoning from known facts, the peculiar remedies of the homœopathist must be regarded as without effect. The result of this discussion of the subject was the more speedy recognition of the recuperative powers of the system, and the abandonment of injurious methods of treatment, and a consequent rapid advance in medical science and an increased success in medical practice.

In the same way a discussion and comparison of different experiences in the treatment of any form of ophthalmic disease may lead to the discovery of the important underlying principles of cure, from which must be derived that scientific practice which we aim to establish and perfect.

If this discord was to be interpreted as indicating a lack of progress it would be disheartening indeed. On the contrary it seems rather to be the natural outcome of too earnest seeking after facts. It seems with the profession as the poet declared to be true of the individual,

"Who knows most, the more he knows to doubt,
The least discourse is commonly most stout."

At least we can console ourselves that notwithstanding all this discord and conflict of opinion on ophthalmic subjects, progress has been steadily made. When Graefe devised his cataract extraction with iridectomy he at once increased the percentage of cures very greatly. That increase went steadily on until about 20 per cent. was added to successful results, making about 95 per cent. in all. And now one of those who asks us to return to the simple operation shows us one table with 96 per cent., and another with 97 per cent. of perfect results, and in 200 cases only 2 cases (1 per cent.) of total failure.¹⁵

Why is it that after so many years we return again to simple extraction with so much greater success? What are the essential elements of this success? Is this attainable by the average operator? These are themes for discussion. So with the other subjects I have mentioned. We treat glaucoma, sympathetic ophthalmia, and errors of refraction and nearly all other ophthalmic affections with more success than ever before. What

are the elements of progress? Let us debate them.

We have indulged in a feast of statistics, and have not digested and assimilated them as we ought. It is possible that by proper discussion of these mooted subjects we can separate the truth from error, and deduce more fixed and definite principles and standard rules for our guidance in practice, and one of my objects in calling your attention to these unsettled questions is to remind you that there will be ample ground for debate in these meetings, and some, if not all, of the questions referred to will be raised for your consideration. "Try all things, hold fast by that which is good," is a safe injunction to heed, and I have no doubt that it will be faithfully observed by the members of this Section.

ORIGINAL ARTICLES.

THE THERAPEUTIC USES OF ELECTRICITY.

BY JOHN V. SHOEMAKER, A.M., M.D.,

OF PHILADELPHIA, PA.

It begins to dawn upon the medical mind that the field covered by electricity is larger than that comprised by any other curative agency. That this should occur long after the whole world was disposed to accept the discovery of electricity in a form applicable to medical treatment as one which was to revolutionize medical practice, is at the first glance strange, but is nevertheless susceptible of easy explanation.

Electricity, known even to the ancients, had yet to wait until a time so modern as the end of the last century before a machine was devised to administer it even in the static form. Then, when men found themselves possessed of a force which they could for the first time generate and control, they naturally fell into confused notions about its being the vital force. Hence, when it is considered that the static form of electricity has comparatively little range in the treatment of disease, that quacks rushed forward to assert and maintain its universal curativeness, and that the sounder observation of skilful physicians discovered the untenability of the proposition, it is not surprising that when, in the early part of this century, current electricity was first generated, controlled, and applied to therapeutic purposes, electricity as a curative agent had been so discredited, that even thinkers in the medical profession were slow to believe in its remedial virtues.

On the one hand, electricity had, by those ignorant of its limitations, been lauded to the skies as a panacea; while, on the other hand, it had, by those equally ignorant of any of its merits, been decried as perfectly worthless. Empirics

¹⁵ Report of the first series of One Hundred Successive Extractions of Cataract without Iridectomy, by H. Knapp. Archives of Ophthalmology, Vol. xvii, p. 73. Also second series of One Hundred Cases. Archives Ophthalmology, March, 1889, p. 10.

having absurdly imagined and claimed that electricity would cure everything, and time having proved that the claim was unfounded, the medical use of dynamic electricity came in, without trial, for a share of the obloquy which attached to the failure of static electricity to do what it should never have been alleged to be capable of performing. Yet, the therapeutic value of static electricity will stand all reasonable test, and similarly, so will the therapeutic value of current electricity. Static electricity has never been fairly tested by physicians, because extraordinary efficacy being at first ascribed to it, and then as generally denied, it lost all standing in court, while current electricity never had proper standing there, because it was discredited in advance, by the loss of faith in static electricity, for which it was no more responsible than it was for the preceding ascription to static electricity of universal virtue.

The proverb truly says that a poor workman never had a good tool, and with equal truth we may add, that a good workman can supplement a bad tool. But these cases refer to work directly wrought by the hand of man. No amount of scientific knowledge or of manual skill can supply the deficiencies of a poor apparatus. No economy could be more false than to possess and use one. To accomplish our purpose in administering electricity, the apparatus must be not only good, but in good condition. Otherwise it is worse than useless; it is a delusion and a snare to both patient and physician. Whether, therefore, the apparatus be galvanic, faradic, combined galvanic and faradic, supplied by the incandescent light current or by storage batteries, or the apparatus be for static electricity, let it be excellent of its kind, under penalty otherwise of its not accomplishing the purpose professedly sought. Makers of good electric instruments now abound in the United States; France excels in them, and even England, which was slow in having specialists in that department of labor, is now supplied.

Dr. W. R. D. Blackwood reports that both static and faradic treatment often have the effect of relieving the chest pains and the debilitating night sweats of phthisis, through the improvement which they effect in general innervation and nutrition.

Faradization of the thorax is very beneficial in spasmodic asthma and chronic bronchitis. The dyspnea of the latter is by this treatment much diminished in gravity.

Even more efficacious in the paroxysms of angina pectoris than inhalation of nitrite of amyl does prompt galvanization of the sympathetic seem to be in aborting an attack of this acute affection.

Sufferers from hay fever are so much addicted to seeking refuge in a change of climate when the season approaches when they are liable to an attack, that there has not yet been the fullest op-

portunity to experiment with electricity in cases of this disease. There is, however, reason to believe from the result of treatment which has been practiced in that direction, that hay fever can be much relieved by the employment of galvanization, administered as in exophthalmic goitre.

In exophthalmic goitre itself galvanization relieves the glandular swelling and reduces the protrusion of the eyeball. The method of application is to place the anode directly under the angle of the inferior maxillary bone (over the pneumogastric), and the cathode over the solar plexus. The current should be moderate, ten minutes at a time, at intervals of two days.

Insomnia is frequently successfully treated by general galvanization or faradization, when the use of drugs is contraindicated. General faradization just before the patient is intended to sleep has a calming effect. This is caused by the capacity of electricity to equalize the circulation and reduce the pulse without lowering its tone. The application is so simple that it can be made by a nurse or a member of the family.

Sciatica can always be relieved during its acute paroxysms by the administration of descending galvanic currents. Permanent cure of it has been frequently obtained by electro-puncture, the needle being thrust down to the nerve at one or more points along the painful portion of the nerve.

Neurasthenia is not always cured by electricity alone, although it frequently is. It will generally yield to electro-massage. This obviates the assumed necessity of the gorging which has been so general in the treatment of this complaint. The method employed is daily combined general galvanization and faradization.

Torpor of the liver is readily overcome by the faradic current.

General faradization of the abdomen every morning for a while, or if more convenient, every evening, will always provoke a movement of the bowels within a moderate time. This treatment is to be recommended far beyond that of the taking of drugs to relieve constipation, because, instead of its being followed by constipation, the effect tends to be permanent. Constant use of drugs for that prevalent ailment of constipation can thus be avoided by the employment of methodical faradization. Nothing so surely and promptly tones up the intestinal muscular fibre as does electricity, and causes the functions of the bowels to be regular.

In intestinal occlusion Dr. Larat¹ recommends galvanic electrization, and he reported nineteen cases before the French Academy of Medicine in which he cited six successes.

Dyspepsia in various forms receives decided relief from galvanization. Defective secretion of the gastric juice is rectified, glandular action stim-

¹ The Treatment of Intestinal Occlusion by Electricity. By Dr. Larat. Paris Letter to THE JOURNAL, June 15, 1889.

ulated, and the muscular tone of the stomach increased by this treatment.

Gastralgia and stomach-cramp are usually at once relieved by galvanization, as are also pyrosis and the vomiting of pregnancy. Currents not exceeding 15 milliampères are best suited to the purpose, the anode being placed on the cervical spine and the cathode on the epigastrium.

Instances have been from time to time reported of the dislodgment of impacted gall-stones by the administration of electricity. As we have no remedy for this painful malady except *dilcareia villosa*, it would be well to give electricity a fair trial for its relief.

Hæmorrhoids, although not a disease of the digestive tract, so often depend upon the blocking of the chylo-poëtic circulation, as to suggest some mention in connection with the preceding brief notice of electrical treatment as applied to the bowels. The aching attendant upon congested piles is often dissipated by placing the anode on the anus and the cathode over the liver, and passing the galvanic current for fifteen minutes, with the strength of from 20 to 30 milliampères.

The value of electrolysis in urethral stricture of the male has been incontestably proved by Dr. Newman, of New York. For that matter, contraction of any duct, such as the lachrymal canal, the œsophagus, or the Eustachian tube, is amenable to the electrolytic method. Extended clinical observation, however, is still needed to perfect these latter forms of electrolysis. For the relief of ordinary enlargement of the prostate gland, a suitable intra-rectal rheophore is required. In cases of extreme hypertrophy of the gland, the negative pole may be applied by a well-insulated needle introduced per anum, and with a current as strong as can be tolerated, say from 75 to 150 milliampères, for from three to five minutes, at intervals of three days. The indifferent electrode may be applied over the abdomen or on the thigh. In all administration of the current to a mucous membrane canal the negative pole must be used, for the positive pole would ruin the passage.

In diseases of children electricity presents excellent results. Marasmus, or general wasting and debility without loss of muscle, is readily overcome by thorough electrical treatment. In this case general galvanization should be used for its tonic effect, and faradization of the muscles employed for giving exercise to them within the lines of producing fatigue. Undue muscular exertion effected in a debilitated child would be injurious, instead of beneficial. Therefore the current should be mild, and the time of application short.

Incontinence of urine, an affection extremely intractable to treatment by drugs, is usually easily controlled by galvanization faithfully administered.

The vomiting of cholera infantum is sometimes

checked by mild faradization of the pneumogasttric.

The dyspnœa following scarlet fever, measles, and whooping-cough, and the aphonia sometimes existing as the suite of these affections, are ordinarily amenable to galvanization; and in the case of the aphonia, static electricity has proved to be extremely valuable.

Dropsy, as the suite of scarlatina, is sometimes quickly reduced by localized electrization, as is also œdema in either children or adults, provided always that it is not complicated with Bright's disease.

Faradization, which tends to relieve the engorged capillaries of the mucous lining of the bladder, is therefore often instrumental in curing cystitis in both adults and children. Incidentally it has been observed in these cases that electrization reduces the mucoid discharges from the bladder.

Galvanization has been proved to be of value in some cases of disease of the eye. Dr. C. S. Bull remarks, in the *New York Medical Journal* of April 27, 1889, that, "in traumatic anæsthesia of the optic nerve and retina, uncomplicated by any laceration of nerve tissue or rupture of nerve fibres, galvanism carefully and persistently applied has been known to produce a rapid and permanent improvement of vision when applied directly to the closed lids, and the current passed through the eyeball."

The knife-pains of locomotor ataxia are sometimes sensibly relieved by galvanization, and spinal galvanization has in some instances so greatly ameliorated the condition of the patient as to permit of his leaving his couch, to which he had previously been almost confined.

In uterine disorders electricity is almost indispensable. Extra-uterine pregnancies have been cut short by both currents, some operators preferring one, and some the other. In dysmenorrhœa intra-uterine galvanization with a strong current is of great service, while in amenorrhœa, by means of faradization through the ovaries and uterus the menstrual flow is soon established. Menorrhagia arising from relaxed uterine walls is specially relieved by faradization. When the result of villous growth of the endothelium, the employment of cauterant galvanic currents will remove the active cause of the affection.

Many eminent alienists, especially abroad, are reporting favorably on the use of galvanization in some mental disorders. Melancholia, with or without delusions, has been benefited by prolonged treatment without recourse to commitment to an asylum. Some patients, presenting delusional or monomaniacal features which had resisted routine asylum treatment, have been thoroughly restored to sanity under cerebro-spinal galvanization.

In the methods of electro-cautery we possess for many cases great advantages over those of

former surgical procedure. The galvanic loop is rapid in its operation, aseptic, and bloodless. When a current of strength sufficient to make chemical resolution is anywhere used, the operator should know that the acid goes to the positive pole and the alkali to the negative pole. Hence it is not a matter of indifference which pole is to be used for a particular purpose. In the electrolysis of a fibroid we aim at its disintegration. Hence, in that case, the needles introduced should represent the negative pole. The result is the liquefaction of the mass, and the rapidity and amount of the effect produced are dependent upon the strength of the current. If, on the contrary, we purpose arresting the hæmorrhage from a bleeding myoma, we must depend upon the action of the positive pole, the current from that pole tending to neutralize the vascularity of the part, producing coagulation of the blood.

In this connection we would remark that much inconsiderate animadversion has taken place with reference to the use of strong currents upon occasions. The question depends simply upon what is the occasion. As a general rule, currents should be used very mild, and their duration not be prolonged. But when we say that, we are speaking of currents for general practice. There are many occasions when the currents cannot be otherwise than strong if they are to accomplish their professed purpose. Such are the currents used in galvano-cautery. They are really not so efficiently strong as they appear to be from the mere mention of the number of milliampères employed, the indifferent pole diffusing the current over a vast space, and the working pole being used as a cauterizing instrument at the point operated upon.

At least brief mention should not be omitted here of the efficiency of electrical treatment in neurotic skin affections. Some forms of eczema are remarkably amenable to both galvanization and faradization. Acne is also sometimes cured by local galvanization, and at present attention is drawn to the employment of strong currents in ulcerative skin diseases. The distressing itching of prurigo is readily relieved by general galvanization or faradization.

The diagnosis of nervous diseases is greatly facilitated by electric tests. Then, the very instrumentality which has enabled us in paralysis to diagnose the extent of the disease to the best advantage, also enables us to the best advantage to treat it, if it is at all amenable to treatment.

Many nervous girls who are a burden to themselves and their families are brought into new enjoyment of life under proper electrical treatment. More treatment by electricity and less by abdominal surgery would relieve large numbers of female hysterical patients.

Epileptiform seizures and epilepsy are sometimes susceptible of amelioration by galvanization. The best way in these cases is to administer the

descending current from the vertex to the epigastrium. If convenient, the current should be administered so as to anticipate the spasm. If this be accomplished, the seizure is generally cut short or aborted. The effect of the bromides is heightened by conjoined electrization. When minor epilepsy is simply held in check by bromine, electrization combined with it has sometimes effected a cure. Chorea and allied tremor are often notably relieved by general galvanization. Cases occur in which a single muscle twitches, as, for instance, the levator labii superioris alæque nasi, for which local faradization proves entirely successful. Spasm of one or both eyelids is effectively treated in the same manner. The ordinary chorea of schools is usually cut short by strong faradization of the entire surface of the body.

When paralysis is dependent upon such central lesion as intracranial hæmorrhage, time should be given for the absorption of the clot. In from six to twelve weeks after the onset of the disease, no treatment equals faradization. Gentle faradization of the brain undoubtedly hastens absorption of the effusion on the brain. For Bell's palsy nothing exceeds in usefulness localized galvanization. The affected muscles should be picked out separately and submitted to treatment one at a time. When the galvanic current proves slow to act favorably upon the disease, static sparks may be advantageously substituted. Recovery is sometimes so prompt as to astonish even the patient.

As we remarked at the beginning of this article, early in the history of electro-therapeutics static electricity was extensively used for the cure of disease, but owing to the causes detailed, fell into disrepute. But within the last few years this form of electricity has been revived for the treatment of disease. It should undoubtedly be allowed a prominent place in peripheral nervous disorders, as there is reason to believe that deep-seated lesions are favorably reached by it through the instrumentality of reflex action.

The use of static machines for general tonic electrization is very advisable in many cases. Various hyperæsthesias and anæsthesias of the surface of the body are often amenable to static applications. Diseases resembling herpes zoster may in the beginning be amenable to this form of electrical treatment. Spermatorrhœa and other conditions of the generative organs evidencing debility, are frequently benefited by the administration of static electricity. Amenorrhœa is sometimes cured by the administration of static electricity, after other means, even including dynamic electricity, have failed. As a counter-irritant in affections of the joints, such as gout and articular rheumatism, static electrization is frequently preferable to faradization.

There is nothing concerning the medical employment of electricity in which we personally

feel more interest at the present moment than in its alleged efficacy in palliating the treatment of cancer of the breast and various other tumors.² Dr. Parsons,³ of the Chelsea Hospital for Women, lately reports that he has been able to check cancer by means of electrolyzation. M. Darin also reports lately excellent results obtained from electrical treatment in the case of cancer and other tumors. If one does but for a moment reflect upon the sum of his observations of fungoid growths, whether vegetable or animal, he will perceive that their vitality seems to be of the most precarious sort, all the more precarious when the growth is morbid, when it is conditioned upon the most undisturbed circumstances to ensure continued cell proliferation and growth. It would seem, then, that as nothing is so capable as electrolysis of shattering the fundamental integrity of any tumor, it would be well to pursue the investigations referred to still further in the direction necessary to settle the question whether it is equal to the palliation or the cure of cancer.

NEEDLESS AND ANNOYING RESTRAINTS IN EYE SURGERY.

Read in the Section of Ophthalmology, at the Fortieth Annual Meeting of the American Medical Association, June 26, 1889.

BY JULIAN J. CHISOLM, M.D.,

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The successful surgery of the day depends largely upon the care bestowed in the carrying out of details. Many things, little in appearance but really essential, make up the summary of successful treatment. While this applies to all surgery, it embraces eye surgery as well. The successes of to-day, which make operations upon the eye the most perfect of all surgical practice, is brought about by the great care bestowed in the preparations for the operation, the manual for its performance, and the after-treatment.

In eye surgery smooth operations cover at least 75 per cent. towards successes, so that the bad results can be partly laid to traumatism, or defective operative procedures. When an eye operation is well done the surgeon may confidently expect good results. To ensure this there are certain points upon which all agree. *Cleanliness holds the first place.* Clean instruments, clean hands, clean dressings, clean surroundings, are all of paramount importance, and should be of universal adoption. To obtain the largest per cent. of successes in eye surgery no one of these can be omitted. The necessity for asepsis and antisepsis are recognized and adopted more or

less generally and thoroughly. Our instruments must be kept sharp, as well as clean, or they will not do the nice work required of them. Putting them in boiling water before as well as after operations ensures this cleanliness, and is a good precaution which many use. The mercurial and boric acid solutions I find detrimental to delicate instruments, and hence I do not immerse cataract instruments in them. The same might be said of passing the blade of a knife rapidly across a flame. If left long enough to destroy bacteria the edge of the blade is very apt to suffer. Boiling water ensures all that is desired, with no risk to the instruments.

The washing of the eye with weak solution of mercury bi-chloride, 1 to 4000, or mercury bi-iodide 1 to 20,000, or boric acid 1 to 40, are in very general use for cleansing the conjunctival surfaces both before, during and after eye operations. Water which has been boiled is found quite as good as the medicated lotions. The eye operated upon is usually in an aseptic condition. As we desire to keep it in the same, we do not wish to impregnate the newly made wound with offending material conveyed in the water used for cleansing purposes, hence the medicated liquids in which the sponges or wiping pledgets of cotton are kept immersed while the operation is going on. This seems to be the chief protection against infection. The momentary application of these lotions to the conjunctiva can be of little service in destroying bacteria. We all do it, some going so far as to wash the face, including the eyelids, with the lotion. It is a harmless procedure, and I believe as useless as it is innocent.

Some surgeons carry antiseptic precautions to an excessive and even annoying degree. They seem to be suffering from bacterial fright, and are suspicious of the most innocent organisms. To them it is as if every man, woman and child met with on the streets of a crowded city are assassins bent upon mischief, and hence enemies. All bacteria are treated as if malignant, and are to be killed in sponges or dressings at least, by the long continued application of heat. Absorbent cotton used for dressings is baked at high temperature for hours, and then kept in air-tight jars which have been equally sterilized by long exposure in hot ovens. This seems to me a useless precaution from over-zeal, the more especially when I see unwashed hands manipulate the excessively prepared dressings. That bacteria exist and are omnipresent no one now questions; but that they are always bent on mischief only the over-zealous believe. Experience proves this to be the case, as no better results are obtained in treatment by those who over-do in their excessive preparations for an operation.

Confinement to bed for eye operations is another practice often annoyingly pressed to the discom-

² "On the Treatment of Uterine Tumors by Electricity," by Thomas Keith, M.D., LL.D. The British Med. Jour., June 8, 1889.

³ "The Arrest of Growth in Cancer by a Powerful Interrupted Voltaic Current (Electro-Necrosis)," by J. Inglis Parsons, M.D. The British Medical Journal, June 8, 1889.

fort of the patient. The eye is an isolated organ not easily influenced by the movements of the body, and therefore to a great extent independent of them. To restrict the movements of the arms and legs, and even of the jaws, because the eye has received a wound at the hands of a skilful surgeon, when such restraints are not practiced should the eye have been accidentally wounded by some crude cutting material, is inconsistent, to say the least of it. It is about as rational to stop the eye from moving because the arm is broken, as to restrain the legs because the eye is cut. The confinement exacted by some surgeons with patients who have submitted to eye operations at their hands, is cruel, the more especially as the experience of others has shown these restraints to be useless, always annoying, and in some cases injurious. I have seen a patient confined to bed because an eye muscle had been advanced. Confinement to the house in such cases is bad enough. My advancement cases walk the streets unbandaged from the moment of operation, and I secure excellent results. Why should I therefore confine them? Up to within a few years nearly all eye operations were considered proper cases for bed treatment. At the present time I am glad to know that the list of such is being freely cut, with the promise of making it eventually very small.

In my own work I use bed treatment to a very limited extent, and never make it compulsory. For the day of operation, especially if chloroform has been used, patients find the bed the most comfortable place, but after the first night they may follow their own inclinations as to its continuance. I presume it is generally conceded that lid operations, neurotomies, enucleations and muscle sections need not be cases for bed treatment. In this list I put iridectomies and cataract extractions. For the past three years my cataract patients have not been put to bed, and I have yet to see any injury from the enjoyment of this liberty. From the operating chair they walk to their chambers, and use the bed or not, as they feel inclined.

Another annoying restraint which is gradually giving way to a more enlightened experience is the use of the *dark room* in the after-treatment of eye operations. When an eye has sustained injury either by accident or at the hands of the surgeon, the common habit is to confine the patient to a dark room while undergoing treatment. With the people this is an all-pervading desire, and it is acquiesced in by the majority of physicians. Notwithstanding all of which it is a bad practice. A simple rule, and in my experience a very safe one, is to allow the patient to enjoy any degree of light which is not offensive to the eye. *If light is not annoying it will not be injurious.* By accepting this law of nature for our guidance the use of a dark room will be found very limited in eye surgery. Before I knew better, I also thought

it my duty to do as I saw others do, shut out the light of day and use candle light for all inspections. I could not find curtains dark enough to exclude all the light that I desired to shut out. In furnishing my hospital some years since every window in the building, wards, private rooms and passages, was completely covered with the darkest shades that I could find; and when in iridectomy and cataract cases the bandages were removed I had additional black curtains which were hung over the already too dark shades, so that the rooms were black enough to satisfy the wants of any eye surgeon. Now these funereal window dressings have all disappeared, and with them the dark shades. Experience has slowly taught me that the theory was wrong and the practice bad. My desire now is to exclude harsh light only, and especially to avoid all sudden transitions. My patients are treated in moderately lighted rooms and are allowed to take all the light that they can bear with comfort, only the eye operated upon being closed. To those who will try the experiment it is surprising to find how much light can be comfortably borne by the majority of eye patients, for their own advantage and that of the attendants.

I have startled some of my specialist friends who use the candle much too freely, when I took them into an ordinarily lighted room to examine a cataract case five days after an extraction, especially when I drew aside the window shade so that under the full light of day the examination of the eye could be made more thoroughly. After watching these cases for a few days, and finding much stronger eyes than they were accustomed to see under the dark room treatment, they have left me with the intention of becoming, as they say, more venturesome in the future.

Another annoying restraint much too freely used is the eye bandage. To tie up an eye for disease or an accident, however trivial to the organ, is a popular device of universal adoption, and one might equally add of universal misapplication. By this I do not mean to infer that the eye bandage is to be discarded from surgical practice, for we often find it an essential factor for successful treatment. I refer to its indiscriminate use, and consequent abuse. For pressure effects we need it, and must ever use it. When it is desired simply to exclude light a better device can be found. In many cases it is applied to keep an eye quiet, which is a physiological impossibility. This delusion is carried out when an attempt is made to dress an eye recently operated upon for cataract or iridectomy by surrounding it with small discs of lint systematically and beautifully piled up until all the irregularities of the orbital surface are brought to a level. These are then secured in place by a roll of bandage for what is called equable pressure. Many years since I used to extol an elastic pad of raw cotton for filling

these indications. When pressed by a bandage the soft compress would sink down, filling up any excavatory spaces, and give as I then thought, an excellent support to the cut organ. I found these theories not sustained and I abandoned that practice.

Now the only dressing I use after iridectomies and cataract extractions is a piece of isinglass plaster. It is designed simply to keep the lids closed over the eye ball. I avoid all artificial compresses. I find the lids with their tarsal cartilages a sufficiently thick and heavy compress, a perfectly adapted splint, moulded by nature to support every part of the anterior surface of the eye ball. When the eye is closed the orbicular palpebral muscle automatically makes just the degree of pressure needed, and retains the lips of the corneal wound in perfect apposition. After operations on the front of the eye ball, a strip of adhesive plaster fills every indication for lid restraint, and it should become the universal eye dressing. It is light, simple, easily applied, comfortably worn and not easily displaced. By the action of the lid muscle it keeps up equable support. It is also transparent, so that any discharges from the eye, or any changes which the lids may take on, can be seen at the daily inspection, and the condition of the eye known without disturbing the dressing. When the object is only to close the eye, the tying up of the head by bandages, however skilfully constructed, is an annoying restraint, which patients will gladly avoid. Those who have submitted to the bandage and compresses in former cataract operations, and to the adhesive isinglass strap in subsequent ones, are loud in their praises of this simple eye dressing.

As to the tying of the hands of patients for fear they may injure the eye recently operated upon, I am glad to say that I have never practiced it. I deem it a needless and very annoying restraint. My cataract operations now exceed 1,800, and are being added to at the rate of over 100 extractions per year—116 for the year just closed, with only two lost eyes. To have the cut eye touched by the finger during sleep, is not an extremely rare occurrence, and that the patient should be awakened with a twinge of pain is not surprising, but I have never seen any trouble come from it in these cases in which my attention was called to the accident at the time of its occurrence. Why tie up the hands of every patient as recommended by some eye surgeons, in order to avoid this imaginary danger. The very restraint, with the loss of sleep and the restlessness which it engenders, may bring about troubles much more serious to the eye than the accidental touching of it with the finger.

Another annoying and injurious restraint is *the rigid diet* enforced after eye operations. There is an idea that in some mysterious way, not anatom-

ically demonstrated, the movements of the jaws excites corresponding movements in the eye, and therefore induces bad results upon the lips of the wound recently made in the cornea. How this notion, of the jolting of the eye by the masticatory movements of the jaws, ever secured professional recognition is very surprising, but it nevertheless shows its influence in the practice of some who feed their patients on slops for days after cataract extractions. They believe that they are following out a wise course in so doing. Their patients survive and get well. But so do also the patients of those who are not subject to this soft diet. It is said that we all eat too much, and from this standpoint a few meals the less can do no great harm. But there is another law even greater in force, which reads: "to secure the ready healing of a wound with the least degree of irritation, disturb the system of the individual as little as possible, and allow the dictates of nature to reign unmolested." Take for instance, our cataract cases. They occur usually in old people, in whom habits are strongly established. They have been accustomed to daily exercise and regular eating. To suddenly suppress in an old person these natural functions, by putting him on his back in bed, with both eyes bandaged, and on rigid diet, is not the best way to keep him healthy while the corneal wound is healing.

The following case, *excessively untrammelled during the treatment*, occurred in my practice during the month of December, 1888: Mr. M., æt. 90, a wealthy old gentleman, sent me an urgent appeal to come to his home, 600 miles from Baltimore, and operate upon him for cataract. Against my established custom, I, in his individual case, yielded to his entreaty and went to him. I arrived at his home in South Carolina at 2 o'clock in the day, and found him sitting by an open fire. He could see me dimly with the left eye. With the right eye in which he had been blind with senile cataract for nearly twenty years, he had good light perception. Within a half hour after my arrival, and with no preparation whatever, I made a smooth extraction under cocaine. The eye operated upon was dressed by the isinglass strip, and the other eye with limited sight was left open. With this eye he could still see to get about, and after the operation he resumed his accustomed seat by the chimney. The only change made in this room was closing the outer slatted blinds to keep out sunlight and drawing down the shades. It was now his dinner time. After the operation he asked for his usual meal, and with my permission he had it. When 8 p.m. came he went to bed in a contiguous room, undressing himself. In the morning he was up for breakfast. I found him in his usual seat in the parlor alongside of the fire place, a screen having been placed between him and the blaze to keep the direct rays from shin-

ing into his face. He had suffered no inconvenience from the operation, had slept well, had enjoyed his breakfast, and was in every way comfortable. I left him that day at 2 o'clock, having spent twenty-four hours with him. My instructions to his family physician, in whose care I left him, were to allow him all the latitude which I had established, and only keep his movements restricted to the darkened parlor and contiguous darkened bed-room, to let him have his usual meals, to look at the face and closed eyelids daily, but to leave the dressings undisturbed for six days; also to telegraph me for instructions should any unsatisfactory changes appear. I knew that the carefully applied isinglass plaster would hold on for a week, and therefore the doctor could not indulge a curiosity for a too early examination of the eye, which he might have done had the compress and bandage been used. The programme was carried out. In due time the strap was removed; no troubles had been discovered at the daily visits. The vision of the new eye rapidly strengthened. Such good sight was restored that at the end of four weeks by the use of a two and a half-inch glass, the old gentleman himself wrote me a long letter of thanks, and as he said to give me an evidence of his handwriting, and of his complete restoration to sight. Better results could not have been obtained had he been made to go through the most orthodox course of restraining and abstaining treatment.

FACIAL NEURALGIA CONSEQUENT UPON PREGNANCY.

Read before the Section of Dental and Oral Surgery, at the Fortieth Annual Meeting of the American Medical Association, at New-York, June, 1889.

BY W. W. ALLPORT, M.D., D.D.S.,
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In the paper that I am about to present to this Section I propose, very briefly, to discuss the nature and causes of facial neuralgia consequent upon pregnancy.

For the term neuralgia, I have never seen a definition that exactly suited me, nor am I satisfied with any definition that I myself can make. But in a general way, it may be said that neuralgia is an acute, intermittent pain carried in irregular, and often in divergent currents through the nerves and their branches, the result of an unnatural disturbance of molecular vital forces; or, it may be said to be a nerve's expression of some pathological condition, which may be contiguous to, or far removed from, the point of expression. Pain is a nerve's expression of disease, as words are expressions of thought. It is a symptom, or an informer of disease, imploring help.

The causes of neuralgia are manifold. Among the most prominent may be mentioned sudden

changes of temperature, pressure upon any portion of a nerve trunk or its branches. This may be from a local deposit or growth of any kind; or from arterial tension by an increased volume of blood; or it may be produced by an opposite, an anæmic condition, a deficiency of blood; an impoverished condition of blood, indigestion; or, in fact, anything that produces such a disproportion of the standard constituents of the blood as will disturb nutrition, or by an impairment, or decay of tissues. Upon this latter point Anstie says: "Amongst the neuralgias that are the most *absolutely* agonizing, are those which occur under circumstances of impaired nutrition incident to bodily decay," and especially is this so, when it occurs at parts at the peripheral end of the nerve.

These are by no means all of the causes of neuralgia, but I have named enough for the object I have in view, namely: to show that facial neuralgia due to pregnancy, is not due, as is generally supposed, from reflex pain, caused by disturbances in the uterus, or from pressure upon nerve trunks in its immediate locality, by the increased weight of this organ during the period of gestation.

It is a fact, I believe, that women while in this condition, suffer more from neuralgia in the upper than in the lower extremity. If this be so, there must be a reason for it; and it can hardly be from *weight* pressure, of the uterus, for were this the cause of neuralgic pain, we should naturally look for its prevalence in the lower rather than the upper extremities, while in fact, it is in the face, cranium and teeth that it is most frequently manifested. Then, too, it is a long way and a very circuitous route from the uterus to the branches of the fifth pair of nerves in the face and its surroundings, and it is difficult to see why these, rather than other nerves of the body, should be most frequently selected for reflex pain from uterine irritation, or pressure.

Although there are exceptions to the rule, I think it is an admitted fact that, while there is usually an increased volume of blood in women in this condition, the increase is in its white, rather than its red corpuscles, its life-giving properties. At the very period in a woman's life when it would seem to be most important that the proportion of life-giving properties of her blood should be the richest, it generally seems to be the poorest. When her system is called upon to sustain, in addition to her own, a new life, her blood is deficient in the life-giving properties to properly nourish her own body, to say nothing of the child she is to bear. The superabundance of serum in her blood may make her plump and full, yet she is usually pale, evincing a lack of vitality, or proper tissue nourishment.

Another important fact, bearing on the point in question, is that all below the diaphragm is in a constant state of venous hyperæmia, while that above is in a constant state of arterial hyperæmia,

and arterial tension with its muscular expansion and contraction is always a fruitful source of nerve irritation and pain. This is doubly true when the arterial hyperæmia occurs in organs like the mouth, where among the teeth there is almost always some pathological condition present.

Then, too, it is a well known fact that during the period of gravidity, most women are troubled with irritability of the nerves of the mucous membrane of the stomach; so much so that, at times, it is difficult for them to retain a sufficient amount of food for proper nourishment. It is much easier, as well as more rational, to conclude that facial neuralgia in pregnancy is reflected from the nerve irritation of the stomach, rather than from the uterus, for irritation of the stomach, or indigestion, is a well-known cause of this symptom. Neuralgia in the lower part of the abdomen, the inguinal regions, etc., is not uncommon in non-pregnant women. In pregnant women, however, these neuralgias are said to be seldom seen. If the neuralgia of pregnancy were a uterine reflex, its *locale* would naturally seem to be near to the uterus rather than distant from it, as in the prevalent facial neuralgia of this condition. In fact, the entire upper portion of the alimentary canal, including the mouth, is usually in an irritable condition, while the lower part is apt to be in a sluggish and torpid condition.

In a majority of cases the sweat glands of pregnant women are found to be in an abnormal state of functional activity; of course the face does not escape this condition, and no one need be told that with its almost constant exposure to atmospheric influences, the nerves of the face are particularly liable to those atmospheric impressions that are always productive of those molecular changes peculiar, or essential, to nerve pain.

Gingivitis is another source of irritation to which these subjects are peculiarly liable, the majority not escaping it. Such is the nervous and vascular connection of the gums with the pericemental membrane, that the disease usually extends to the latter organ, and it not infrequently happens that the entire denture becomes not only loose, but the pressure on the teeth produces acute pain consequent upon severe inflammation in the pericemental membrane. This membrane, in every way, presents the hyperæmic condition that we would expect to be productive of reflex nerve pain. Besides this, the swollen condition of the membranes surrounding the apical foramen of the tooth so strangles the vascular and nerve supply of the tooth as to seriously interfere with their functions, and must, therefore, produce irritation at the nerve peripheries. Consequent upon this, as well as from other causes, proper nourishment of the tooth structure is cut off, and the tooth is not only rendered more liable to irritation and decay from the action of external agents, but such starved condition and retrograde metamorphosis

of the nerve fibrils of the tooth structure is established, as to be prolific of the agonizing neuralgia spoken of by Anstie, which occurs under circumstances of impaired nutrition incident to a wasting of tissue or bodily decay.

INSANITY PROCEEDING FROM THE COLON.

Read before the Chicago Medical Society, July 15, 1889.

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The term "reflex" as applied to certain pathological conditions has been so often misused, and such erroneous conceptions have been formed under this all-embracing title, that we confess to a dislike of the term and only consent to use it in its most restricted sense. One has only to refer to the vast number of surgical procedures relegated to oblivion, to emphasize the erroneous conceptions formed regarding the reflex nature of some nervous disorders; clitoridectomy, circumcision, even castration, and lastly oöphorectomy, which we believe to be still somewhat in fashion. Scarcely a portion of the body, or organ has escaped, and the recent literature from the pens of those who devote special attention to the diseases of a single organ, is filled with cases illustrating the potency and power of the particular organ, which they treat, to cause reflex nervous disorders. The ophthalmologist, not content with his reflex headache, neuralgia, etc., has recently added epilepsy to the list, the rhinologist has appended asthma to the pharyngeal tonsil, and a homœopathic surgeon has recently begun to dilate the anal sphincter and scrape out the rectum for almost every disease from hæmorrhoids to alopecia. The colon has thus far largely escaped; not, we think, through want of importance, but solely because no one seems to have devoted especial consideration to the diseases of this organ. The "colonologist" belongs to the future.

So far as my knowledge extends the earliest writer to call attention to the colon as a reflex cause of insanity, was Schroeder von der Kolk.¹ It formed no mean division of his order of sympathetic insanities, only yielding in importance to the uterus and sexual parts. He regarded the trouble as a true reflex, an irritation beginning in the peripheral endings of the sympathetic nerves, propagated to the vaso-motor supply of the central nervous system, and there working disorder principally in the circulation. In these days of germs and ptomaines, a more acceptable theory to many, will be that we have, in these cases, a true auto-infection; an addition to the blood of noxious elements which, circulating through the nervous system, produce toxic effects. It is probable that both theories have an element

¹ Mental Disease.

of truth. In some cases there may be a direct poisoning of the blood, while in others the disorders may be purely reflex in character.

Von der Kolk was himself affected with this disorder. While suffering from constipation and fatigue from overwork, hallucinations and phantasms appeared to him and continued for three days. A large clyster was administered, which was followed by a copious evacuation of foul-smelling faecal matter; immediately the hallucinations disappeared and his mind became tranquil. There are no distinguishing symptoms of this condition, but an intellectual disturbance which has its origin in this source, is said by Schroeder to be characterized by a peculiar depression of spirits, by anguish of mind, and by the patient's self-accusations of wretchedness and baseness. The disease has a very slow course, and generally the mental anguish has existed some time before the physician is consulted.

Whatever view may be taken of the basic pathology of these conditions, there can be no doubt of their etiological relations, and additional emphasis is laid upon the necessity of thoroughly investigating possible sources of reflex irritation in all functional nerve disorders. The following cases illustrate the gravity of the disturbance which may follow disease of the colon and the necessity of a more careful inquiry into the condition of that organ:

July 17, 1887, I was summoned to an adjoining city to see Mrs. G., in consultation. The attending physician furnished me with the following account: Father of patient living and well, mother died of cancer of the uterus. No trace of insanity in the family, or neurotic heredity of any kind. Her health previous to the present difficulty had been fair, an occasional cough with inflammation of the pharynx being her only illness. Menstruation appeared at 14 and was always normally performed. Married at 23, and at 25 had a premature labor, this accident not being followed by any disturbance of the general health. Present illness began about eighteen months ago and was marked by an increasing general debility, loss of appetite, decrease in weight and obstinate constipation. The symptoms did not point to a change in any particular organ. Six months later had sudden attacks of faintness occurring at irregular intervals. These attacks would begin with pain in the left hypochondrium and a sense of suffocation. Within the last six months tenderness on pressure has appeared in this region, and the attacks have become more frequent and are accompanied by vomiting. During this time she had no febrile reaction, but was nervous, excitable, and affected with morbid fears. This was substantially her condition until three months before she came under my observation, when she began to show positive signs of insanity; was restless, sleepless, and incoherent, with confusional hallu-

cinations and non-systematic delusions of a depressed and melancholy character.

Examination of the patient shows the muscles and fatty tissues wasted to the last degree. The flexor tendons of the thighs are contracted, so that the legs cannot be extended. The skin is of a dirty brown color, and covered with braunny scales. Eyeballs prominent, pupils react normally. Ophthalmoscopic appearance of fundus normal. The heart, lungs, kidneys and sexual organs were carefully investigated and nothing abnormal noted. A line of superficial dulness could be made out extending transversely across the abdomen, on a level with the umbilicus, and a lobulated mass could be felt in the left inguinal region, but it could not be distinctly outlined. The temperature was normal. Pulse weak and variable from 120 to 140 per minute. The mental symptoms were substantially those which were described as existing for the past three months.

A diagnosis of an exhaustional-confusional form of insanity proceeding from a dilated and over-filled colon, was made. Large rectal injections were ordered, containing in each pint of water 2 ozs. of listerine and 1 drachm of common salt. Tonics were also ordered, with cod-liver oil inunctions, massage and general faradization.

The subsequent history was furnished by the attending physician.

July 19. Condition unchanged, absolutely refused food. Insisted that her brother had been recently killed.

July 20. First injection given, consisting of about 2 pints. The tube was passed well beyond the sigmoid flexure. In about an hour the injection came away and with it a considerable amount of faecal matter. Upon withdrawing the tube, its distal end was found to be coated with dark, waxy, adhesive faecal matter entirely unlike that which came away. After the injection the patient passed into a quiet sleep, from which she awakened after about two hours, and called for food for the first time in many weeks.

July 21. Marked improvement, pulse 100. No faecal masses came away with to-day's injection, but the tube is still coated as at first, showing that a mass is still retained. Mind perfectly clear and tranquil.

July 30. Continued improvement. Since beginning the treatment ten rectal injections have been given. Occasionally a dark, hardened faecal mass comes away.

August 14. Able to be out of bed but walks with great difficulty, owing to the muscular wasting. Mind perfectly clear, but retains only an indistinct recollection of the time of her illness. For the past two weeks her bowels have acted without cathartics, and her appetite is excellent.

November 20. No longer suffers from constipation, and her health is better than it was before her illness.

An account of a striking case of this kind was sent me by my friend Dr. H. M. Bannister, senior assistant physician to the Illinois Eastern Hospital for the Insane. The patient, a panophobic melancholic with suicidal tendencies, had refused food for months and had been fed artificially. He seemed too weak to walk and was sent to the infirmary ward, where the attendant noticed that he had no free passage from his bowels. A large injection was ordered, which freed him of an immense quantity of fæces, which he had been keeping in store and letting off by driblets. Within an hour or two, during the momentary absence of the attendant, he got up, dressed himself, broke through a window and made his escape. He eluded a very thorough search, and was only heard from some time later, when he wrote a perfectly straight letter for his clothing.

Case third was that of a young man 30 years of age, having a marked neurotic heredity. His mother is now insane. Of nervous temperament, but of previous good health and strength. He consulted me for what he termed a marked change in his character and habits. From being cheerful and contented he had lately become nervous, suspicious of his fellow-workmen, fretful, and inclined to quarrels and to take offense. These mental symptoms had been accompanied by decreasing weight, failure of strength, general debility, loss of appetite and a disinclination to exertion. An account was given of irregular action of the bowels extending over one year; at times constipation and again several watery discharges, to be succeeded by a period of inaction. A copious rectal injection relieved him of a large mass of dark, consistent, foul-smelling fæces. With this came a complete restoration of the normal mental tone.

Regarding the treatment of this condition we incline to the view expressed by von der Kolk, who says (p. 134, *ibid.*): "All remedies which act as violent irritants of the colon, the so-called drastics, only increase the tendency to stricture, they add to the sensibility of the colon, and the accumulation of blood in it, and cause watery stools, while the hard masses in the upper portion of the large intestine still remain. The disquietude, the excitement, and the uneasy feeling of the patient are thereby increased, but the strength is diminished, if these medicines are continued for any length of time; the circulation becomes more and more irregular, the radial pulse becomes small, and the limbs cool." The first case is instructive in this regard. The consulting physician in that case said the diagnosis was an absurdity because the patient had been given cathartics, causing repeated movements of the bowels, and they always made her worse, increasing the weakness and mental aberration. He incontinently withdrew from the case upon learning that the attending physician agreed with us.

In ordinary constipation where there is simple atony of the bowels, laxatives may be indicated; but where we have a true overfilling with distension of the pouches of the colon, cathartics are of little use, and may be positively injurious.

434 W. Adams St.

MEDICAL PROGRESS.

SHOULD WE TAKE PROPHYLACTIC MEASURES FOR THE PREVENTION OF PNEUMONIA FROM A POINT OF VIEW OF CONTAGION?—By DR. CRO-NIGNEAU (Société de Méd. Pratique, Paris). About a year ago I was called to a lady whom I found suffering from pneumonia affecting the lower third of the right lung. In spite of classical treatment rigorously carried out (antimonials, alcohol, tonics, revulsives), nearly the entire lung became hepatized, and although the fever did not run very high, there was soon paralysis of the bladder with retention of urine necessitating catheterization, and paralysis of the bronchi, phenomena which, in the light of existing theories, one would ascribe to an intoxication of the entire organism by the leucomaines of Fränkel's diplococci. The patient died. Eight days afterward, her brother-in-law took to bed with pneumonia of the apex of the right lung. There was no suspicion of tuberculosis, although the patient, aged 54 years, had long suffered from catarrh, for which reason there was a *locus minoris resistentiæ* offered to all infectious germs. The disease ran a normal course up to the eighth day, when the patient, who was very much cyanosed, died suddenly of pulmonary hæmorrhage. I have reported these cases because I wish to propose the following questions: In view of the prevailing opinions relative to the etiology of pneumonia, do we see in these two cases, separated by an interval of eight days, affecting two members of the same family living in the same house, an example of contagion or simply one of coincidence? If the former, or if we are in doubt, should we direct the family to take the precautions of disinfection which hygiene demands as safeguards against all bacteriological affections?

M. BROCC: There is more than one variety of pneumonia and all pneumonias are not contagious. The pneumonia *a frigore* of the country does not make victims of those about the patient; the pneumonia of the city, on the contrary, is often contagious. The different varieties of pneumonia present clinical characteristics which are sharply defined and, although I do not deny the existence of the pneumococcus, we are not yet sufficiently well informed of its nature and the conditions requisite for its pathogenic development.

M. GUELPA: I dispute the assertion of M. Brocq, that there are non-contagious pneumonias; for the existence of the pathogenic microbe, be it

that of Friedländer, Fränkel or others, may always be demonstrated. In this connection I may cite the case of the servant, in M. Chantemesse's laboratory, whose saliva injected into guinea pigs always produced pneumonia.

M. WEBER: Of course the contagiousness of pneumonia is associated with a microbe; but the microbe does not develop unless the soil is favorable. In animals infectious pneumonia is frequent and taking cold favors its development. There is a pneumonia of animals to which the term "pneumonia of the stables" is applied. This is always grave and difficult to cure; it attacks animals enfeebled by previous disease.

M. DUBOISQUET: I agree entirely with M. Guelpa, so far as contagion by the intervention of various microbes is concerned. But aside from the microbe there is the question of soil, as M. Weber has so well said. During the epidemic of 1886, I attended an old man with pneumonia. His wife in turn was seized, and then the *concierge* of the house and his wife. The old man and the *concierge* were both addicted to liquor; the former died, the latter was dangerously ill. The two women, who were of sober habit, were only mildly attacked.

M. LAVAUX: During the epidemic in question, I myself contracted pneumonia. My comrades, the internes, cared for me with the greatest devotion, but not one of them had the disease. I doubt the contagious nature of pneumonia.

M. PETIT: Clinically and microbiologically it is difficult to distinguish the various forms of pneumonia, and though numberless cases of its non-contagiousness are observed, the deduction that it is never contagious does not follow. This being established it seems to me proper to always use prophylactic measures, just as it is prudent to do so in the case of tuberculosis.

M. BALZER: It is especially important to disinfect the sputum and all objects which have been soiled, for the pneumococcus may preserve its existence after the pneumonia has been cured.

M. LECERF: Not merely do pneumococci exist in the saliva of people who have been attacked by pneumonia, but they are very often found in the saliva of healthy people who have never had the disease.

M. TOLÉDANO: Is it not true that the entire course of pneumonia indicates a disease of infectious nature? The fever, the duration, the incubation, the cyclical evolution are the characteristics of all contagious diseases.

M. CRONIGNEAU: As we cannot be sure that the case of pneumonia in hand is not contagious, would it not be prudent to seek in every case to protect those who surround the patient? This was the question which I asked, and the discussion which has followed seems to me to have given an affirmative answer.—*Journal de Médecine de Paris*, June 30, 1889.

ON CONDURANGINE.—ROBERT (*Les Nouveaux Remèdes*) obtained this glucoside from the bark of the condurango. It possesses two remarkable qualities: 1. If a water solution of it is heated to 40°, it coagulates; 2. If sea-salt is added to the water solution the condurangine forms a precipitate at the bottom (in these respects it resembles albumen). It has a well-defined toxic effect upon the central nervous system. When given in small doses it imparts to the walk of an animal an ataxic character which has some resemblance to that of *tabes dorsalis*. Besides this poison seems also to have an effect upon the peripheral nerves and the muscles. Electric irritability is at first increased, but diminishes afterwards. In large doses condurangine always causes a diminution of the appetite or complete anorexia; during the beginning of the period vomiting and a great deal of salivation was noticed in the carnivora. The fatal dose is 0.02 gr. per kilo of animals in carnivora and about 0.06 gr. in herbivorous animals. Does condurangine have a specific action on cancer cells? It is well known that of late the condurango bark has been much praised as a cure of cancer of the stomach. But this remains to be proven. It is administered either through the mouth or by injection of a sterilized solution.—*Journal de Médecine de Paris*, No. 21, 1889.

THE TOXIC ACTION OF COCAINE.—Cases of poisoning have been collected by DR. A. WÖLFLE from the various Austrian, German, British, French and American journals, as follows:

1. Instillation in the connective tissue sac of 15 drops of a 5 per cent. solution. Moderate symptoms of intoxication.

2. Twenty per cent. solution. Penciling of the nasal cavity.

3. Penciling of the larynx with a 20 per cent. solution (about 5 grm.).

4. Injection of 0.06 grm. of cocaine in the gums. Very severe symptoms of poisoning.

5. Injection of 6 drops of a 20 per cent. solution in the gums. Moderate degree of intoxication, without secondary effects.

6. Injection of 0.2 (!) in a case of facial neuralgia. Severe symptoms.

7. Injection of 0.021 grm. in front of the ear. Collapse; cold sweat; improvement in fifteen minutes.

8. An injection, by mistake, of 1.25 grm. in a case of sciatica. Congestion about the head, rapid pulse, quickened respiration, nervous symptoms.

9. Injection in the nasal cavity. Aphasia and agraphia.

10. Injection of a 5 per cent. solution under the periosteum of the jaw. Severe collapse in 5 cases.

11. Four centigrams in the eyelid. A doubtful case of intoxication.

12. Three-fourths of a syringe of a 15 per cent. solution in the gums. Severe poisoning.

13. Injection of 0.75 grm. (!) in the urethra. Epileptiform convulsions, irregular heart's action, cyanosis, death twenty minutes after the injection.

14. Injection of about 0.2 in the urethra. Clonic cramps, cyanosis, rapid pulse. Patient revived in an hour. Patient suffered from epilepsy.

To these cases the author adds five others which occurred under his own observation, and from his analysis of the sum total concludes that cocaine, when employed about the head and face, is capable of producing much more serious results than when used in other parts of the body more remote from the brain. This corresponds somewhat with the observation that other agents, such for example as chloride of iron; when injected in the extremities hardly ever produce injurious effects, while injected in the face dangerous emboli of the brain not infrequently result. In all small operations on the extremities or trunk a gram of a 5 per cent. solution may be safely injected; whereas in the face, with the exception of the mouth and throat, and the hairy scalp, more than 2 centigrams should never be used.—*Wiener Med. Woch.*, No. 18, 1889.

EXTRACTION OF NERVES.—At the Congress of the German Surgical Society in Berlin, 1889, THIERSCH, of Leipsic, read a paper on the extraction of nerves. In order to tear out nerves, especially the trigeminus, with as little manipulation as possible and as close as can be to the base of the brain, it has been customary to grasp the nerve in its continuity in the direction of its length. In this procedure the nerves which are really grasped are drawn out, but not the branching twigs. It occurred to Thiersch to twist the entire bundle of nerves, and after a number of fruitless experiments he succeeded in constructing an instrument which is fairly well adapted to this purpose. It consists of a forceps which holds fast without cutting or slipping. One branch is concave, the other convex; these fit closely together and both are serrated, the serrations being smoothed off. In the five or six years since the writer began his experiments he has operated twenty-eight times, on seventeen patients. In five cases the supraorbital nerve was involved, in eleven cases the infraorbital, in three the lingual, in four the inframaxillary, and in one each the mental, the auricularis major, intercostalis, etc.

Horsley has operated fifteen times in cases of trigeminal neuralgia, with complete cures in about one-third of the cases. In obstinate, recurring cases he has opened the middle cranial fossa and cut through the branches of the trigeminus to the inner side of the foramen ovale. Horsley was obliged to abandon an attempt to extir-

pate the ganglion gasserii on account of hæmorrhage. He regards the diseases in question as mostly of peripheral origin.

Thiersch has repeatedly performed the operation at the foramen volurdam and foramen ovale, sometimes with trephining, but regards the operation as a difficult and dangerous one, calculated to produce functional disturbances. He has considered the extirpation of the ganglion gasserii, but has never attempted it because a portion of it is firmly attached to the dura mater. He believes that these neuroses depend generally upon peripheral changes, although he has seen cases of undoubted cerebral origin.—*Wiener Med. Woch.*, No. 19, 1889.

EXPERIMENTS REGARDING DEATH BY HYPERTHERMY, AND THE COMBINED EFFECT OF CHLORAL AND HEAT.—On the ground of experiments made on dogs, RALLIÈRE (Paris) arrived at the following conclusions: The body temperature may be increased to 5 or even 6 degrees Celsius above the normal if this increase is temporary and immediately followed by a cooling-off; the danger of hyperthermy lies in the duration only. Animals which have stood an overheating quite well may die within the next twenty-four hours; after the expiration of this period unfavorable occurrences are not apt to take place. If the animal has previously been given chloral the danger is incomparably greater; death often occurs sooner, at lower temperatures and with shorter duration of the effect. Often general convulsions will occur immediately after the increase of temperature, or later, within thirty-six hours; in this case the animals die with a subnormal temperature (as low as 26°), or with temperature nearly normal. Sometimes death ensues without previous convulsions. The author concludes that high temperatures or continued increase of body temperature are a contra-indication to the use of chloral. He also thinks that in administering medicine the degree of fever should be taken into consideration more than has been done so far.—*Centralblatt für Klinische Medizin*, No. 26, 1889.

ON SYPHILITIC ARTHRITIS.—In a résumé of a clinical lecture on this subject, M. KIRMISSON, of Paris, says: From a diagnostic standpoint the exact location of the pains and of the tumefaction at one or at several places about the joint are of vital importance. Another factor equally significant is the contrast between the oftentimes anatomical lesions and the lack of functional troubles. A patient with a tumefaction of enormous size on his knee still moves his joint with great facility. In other varieties of chronic arthritis, and especially in tubercular arthritis, such immunity is but rarely observed in the movements.—*Le Bulletin Médical*, No. 43, 1889.

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SATURDAY, AUGUST 17, 1889.

REFLEX NASAL NEUROSES.

Five years have elapsed since DR. WILHELM HACH's monograph: "Ueber eine Operative Radical-Behandlung Bestimmter Formen von Migräne, Asthma, Heufieber," etc., aroused, in those not intimately familiar with the possibilities in the case, a sense of skepticism by reason of the multiplicity and diversity of the pathological reflexes which were described as emanating from the nose. Certain forms of asthma, spasm of the glottis, cough, migraine, supra-orbital neuralgia, swelling and redness of the external nose, syncope, and epileptoid seizures, were attributed to nasal irritation, occasioned by hypertrophy of the turbinated bodies, polypus, and intra-nasal deformity. His observations were, in part, corroborative of those previously published by Dr. Daly, Dr. J. M. Mackenzie, and Dr. Fränkel, while the remaining ones have since been confirmed and supplemented by other writers.

Two essays reiterating these conditions, entitled respectively, "Cough in its Relations to Morbid States of the Nasal Cavities," and "Epilepsy Caused by Intra-Nasal Disease," were read at Newport before the Section of Laryngology and Otology of the American Medical Association, and Dr. J. M. Mackenzie, at the recent Congress of the American Laryngological Association, described similar phenomena which were excited by adenoid hypertrophy in the naso-pharynx.

The term "reflex" is, doubtless, often misappropriated, yet it has a definite significance, and the pathological reflexes which originate in nasal or naso-pharyngeal irritation and terminate in

cough, laryngeal spasm, or asthma, follow much the same pathway as the physiological reflex known as sneezing. The nasal branches of the ophthalmic division of the fifth nerve and the nasal branches of the anterior palatine descending from Meckel's ganglion which is in connection with the superior maxillary division of the fifth nerve, conduct the sensory impressions to the medulla. It is there reflected to the respiratory, pneumogastric, and other centres, whence the deep inspiration, the forced expiration, and the coincident spasm of the pharyngeal and laryngeal muscles, termed a sneeze.

This mechanism, of course, varies somewhat with the different pathological reflex acts, and in the group constituted by reflex pareses, considerable complexity may enter by implication of the vasodilators through the superior cervical sympathetic ganglion.

But nasal irritation does not in every case result in reflex phenomena. Evidently still other conditions are essential.

Certain cases are in part determined by involvement, especially of the "sensitive areas" described by Mackenzie, of Baltimore, as limited to the nasal erectile tissue and particularly to the posterior ends of the inferior turbinates, but even then the tendency to evolution of reflex phenomena varies in different individuals. Functional derangement tending toward special susceptibility of certain nerve centres, including those wrought upon by peripheral nasal irritation, doubtless determines other cases; and chronic inflammation or a predisposition to acute congestive states of particular organs, unquestionably favors the development, at that point, of the ultimate link in the reflex chain. Thus, one affected with bronchitis would suffer the more readily from asthma excited reflexly by nasal irritation, laryngitis predisposes under like conditions to spasm of the glottis, and digestive derangements to migraine. So, in the completed cycle three factors obtain: nasal irritation, super-excitability of nerve centres, and a susceptible peripheral organ. But the nasal irritation is the initial link without which the peculiar reflex is not excited and to which the other factors are subservient. It is the element most easily demonstrated, most readily removed, and eradication of which will accomplish a cure.

It is, perhaps, not as specifically stated as it should be by writers, that only a considerable

number of such neuroses have a nasal origin. Identical symptoms can proceed from distal irritation elsewhere than in the nose or from immediate disease of the organ of manifestation, and nasal irregularities, being general, may confuse the diagnosis by incidentally coexisting. Emphysema and nasal polypi are not uncommonly associated, but it would be unwise to expect the mere removal of the polypi to afford complete relief of the dyspnoea consequent upon the emphysema. Nevertheless the polypi should be removed, as in this and analogous states, benefit is thereby secured to nasal function and any possible reflex nasal element is eliminated.

Occasionally the relation of cause and effect between nasal disease and its reflex manifestation becomes apparent from the general history and symptomatology. Again, the diagnosis can be made by exclusion, and more rarely, an explosion of the reflex may be induced through artificial irritation by a probe to the sensitive area. But commonly only the subsidence of the reflex act following the removal of an associated nasal lesion will amount to a demonstration.

It is certainly "unnecessary where no inconvenience is felt to restore geometrical symmetry to the turbinated bodies or to invest the lining membrane of the nose with artistic merit," but the mere coexistence of a decided pathological condition or deformity in the nose with any one of the reflex acts known, at times, to proceed therefrom, should prompt the immediate correction of the nasal fault.

ILEUS.

The perennial effort of the medical world to secure some definite mode of treatment for intestinal obstruction (an indefinite ailment) praiseworthy as it is futile, has again made its appearance. This time at a recent meeting of the Berlin Medical Society, through the presentation by DR. GOLTDAMMER of a series of fifty cases, occurring in his own practice which he had treated without selection and consecutively, by large doses of opium. The results obtained by such treatment, (30 per cent recovery), compare very favorably with those of laparotomy—out of 328 cases of laparotomy collected by B. F. Curtis, 68.9 per cent. mortality—and invite our mature deliberation, especially when we bear in mind the com-

mon opinion extant among surgeons as expressed by Greig Smith, quoted by Jacobson, viz.: "To acute cases there can be but one termination *death*. . . . Certainly 95 per cent. of such cases die, hence the indication is clear enough (as clear as the indication to tie a bleeding) carotid artery."

Not that we may ever hope to discover a panacea for an ill possessing, a symptom-complex that may be evoked by the most varied of anatomico-pathological conditions; from intestinal concretions to cancer, mesenteric embolism to invagination; but because by so doing we may possibly disabuse ourselves of the notion that there is but one proper course to pursue in every case, as well as reap the benefit of the new truths always elicited on such occasions. Among the latter then the above quoted opinion is not wholly true.

"Success in this department will only come when a diagnosis has first been made, at least with reasonable surety. The practice of explorative laparotomy for every case is as yet to be condemned. Our statistics can only then be made more favorable than the expectant treatment, when we have selected those cases in which there is a reasonable hope." (Jacobson).

Just here it seems fitting to emphasize the fact that 30 per cent. of all cases recovered under such palliative treatment as full physiological doses of opium may be considered to be, when combined with rigid attention to diet. Also that the post-mortem examination of those dying under said treatment were as follows, 20 per cent. cancerous, 10 per cent. old cicatricial adhesions, 14 per cent. invaginations, 6 per cent. old or new perimetritis, 12 per cent. old strictures from cicatrices, and 4 per cent. tubercular peritonitis, extensive adhesions.

If we regard as incurable by any treatment the cases of cancer, the cases of tuberculosis with adhesions, and half the cases of invagination—such are the statistics for the latter—he is to be credited with results that "must give us pause"—over 50 per cent. recovery!

In concluding he presented the following deductions, which are thoughtful if not to be commended in every case.

1. To be operated are: Cases in which an invagination is clearly to be diagnosticated as shown, by the youthful age; sudden onset; bloody stool;

absence of meteorism, possibly tenesmus; but above all a tumor.

2. In such cases of very acute inception as fail to receive benefit from the bold use of opium—7 grains in twenty-four hours—and in whom the symptoms of collapse continue after such treatment to increase. And,

3. Finally in those cases in which the opium has, for a time seemed to benefit only to have the symptoms reappear. If to these we add those which the surgical authorities are now almost unanimously agreed never to operate, (a) when an approximately correct diagnosis cannot be made; (b) when the patient is already moribund; (the statistics in the past have been spoiled by such surgery) or (c) when there is great cachexia with distention; we will not go far astray in our treatment.

As to diagnosis there is this to say: Bearing in mind that we may have all the symptoms as secondary to acute inflammatory processes; peritonitis, perityphlitis, etc., or likewise (and this without actual occlusion of the gut) in paralysis, embolus of the art. mesar. or external adhesions; that it is essentially differential, and must be made by exclusion. To do this some aid may be furnished by an effort on the part of the physician to answer the following five questions:

1. Is it mechanical or inflammatory, acute or chronic?
2. Is there a tumor palpable?
3. What is the location?
4. Is it a new growth?
5. Where was the initial pain?

1. The inflammatory ileus, (*ileus inflammatorius* of old writers) will differentiate itself from that which is of mechanical origin, by the history of fever with its concomitant symptoms of pain and tenderness, the former of a colicky, the latter of a localized character, the other systemic excitation rather than a depression. If constipation exist in the inflammatory obstruction, it is not so complete that some feces cannot be reached by enemata. Having ruled out the inflammatory form, then decide as to the acuteness of the attack. Among the acute obstructions are to be classed volvulus; invagination; incarceration; almost always affecting the small intestine, and requiring operative interference for cure. Pain in the incarceration abrupt in its onset and continu-

ous; while paroxysmal in intussusception and volvulus. The two quickly fatal, meteoric as well as meteorism, the last slow; no meteorism.

If *chronic* then we have to deal with the large intestine and carcinoma in by far the largest number of cases, though stenosis from syphilitic and tubercular origin are also factors here. How exceedingly essential however it is to differentiate between the sudden failure of compensation after a gradually occurring stenosis, and an acute obstruction, Rosenbach has recently demonstrated, making at the same time a taking parallel between this and the similar failures in other organs, like the heart, bladder, stomach, etc., where a time comes when the work becomes greater than the compensatory hypertrophy, and sudden absolute failure results.

Study the initial symptoms and prodromata!

2. Almost every case of invagination is accompanied by a characteristic sausage-shaped tumor, so much so that 70 per cent. are to be diagnosed; when we take into consideration the absence of meteorism, blood in stool, etc., with the tenesmus so characteristic. The rectum should be explored in *every case*, with the whole hand if necessary, when the tumor can usually be felt, as well as the answer to the fourth question elicited, for over 60 per cent. of the large intestine occlusions are located in the rectum and sigmoidea.

3. *Location.* Every case will be treated to a number of enemata before a positive diagnosis has been made. Knowing that the average rectum holds a pint, that $1\frac{1}{2}$, 2 and 3 pints are required to fill the three segments of the sigmoidea, and never more than 9 pints the colon, we can approximate the location of the obstruction if we measure the quantity of fluids injected. This should be done gradually, gentle massage of the abdomen being employed, and an elevation of syringe 6 feet (which gives 2.6 pounds pressure). Vomiting of formed feces is the only absolutely sure stercoraceous vomiting, and indicates that the location is at least below the valve. It is admitted that illy-smelling digesta come sometimes from the lower portions of the ileum.

The nearer to the pylorus the greater the suppression of urine. The *signe de Dance* is a depression in the right iliac fossa, due to the traction of an ileo-cæcal invagination, as it mounts upward and toward the mesial line.

The last question both aids in locating, as well

as from its nature determining the character of the obstruction.

A fitting conclusion to this will be the observations of R. H. Fitz, . . . "The diagnosis must be made in the first two days; the capacity of the colon determined before tympany develops. Make diagnosis by exclusion, seat by injection, variety by seat, age and antecedents. Treatment is surgical on the third day." To which we will only add, if the diagnosis *cannot* be made, *use opium. In medias tutissimus ibis.*

EDITORIAL NOTES.

HOME.

DR. W. P. MANTON, of Detroit, has received the appointment as consulting gynecologist to the Eastern Michigan Asylum.

FACULTY CHANGES.—The College of Physicians and Surgeons at St. Louis have added to the faculty Dr. Y. H. Bond, as Professor of Gynecology; Dr. Wm. Porter, Professor of Diseases of the Chest; and Dr. I. N. Love, Professor of Diseases of Children.

THE NEW YORK BOARD OF HEALTH.—The Sanitary Superintendent of the City Board of Health, Dr. Walter DeF. Day, has been compelled to resign on account of ill-health, after sixteen years of service. Dr. William A. Ewing has been appointed in his stead. Dr. Ewing has formerly had a long term of service in the Board, as Sanitary Inspector, going back after an absence of three years.

THE HOSPITAL AT BURLINGTON.—The Mary Fletcher Hospital at Burlington, Vermont, has added an ophthalmological service, with Dr. J. H. Woodward in charge. Dr. Richardson of the Visiting Medical Staff has resigned and Dr. J. C. Rutherford has been appointed in his stead. Dr. Walter Carpenter has been reelected President of the Board of Trustees.

UNIVERSITY OF MICHIGAN.—It is reported that the Professorship of Surgery in the Medical Department of the University of Michigan has been offered to Dr. Charles B. Nancrede, of Philadelphia. He is the Senior Surgeon at the Episcopal Hospital in that city.

IMPROVEMENTS AT THE PROTESTANT HOSPI-

TAL.—*The Weekly Medical Review* says: The Protestant Hospital Association (St. Louis) has recently been the recipient of some generous donations, amongst which we note the following: By Mr. and Mrs. Thos. B. Dyer, a strip of ground running along the south line of the hospital property, and which is equivalent to at least \$1000. Mr. Alex. Largue, before his decease, expressed a determination to make a bequest to the hospital of \$500. He died before he had completed his will, but his widow and son, Mr. Alex. Largue, Jr., have voluntarily paid over to the Hospital Association their proportion of this \$500. Mr. Wm. R. Pye has shown his liberality by donating \$5000. That the hospital is in a flourishing condition is shown by the fact that the want of room compels the erection of an addition and the making of alterations to the extent of \$10,000; this work is now in progress. Twenty-four new private rooms will be added.

ICE IN THE SICK-ROOM.—*The Sanitarian* says: A saucerful of shaved ice may be preserved for twenty-four hours with the thermometer in the room at 90° F., if the following precautions are observed: Put the saucer containing the ice in a soup plate and cover it with another. Place the soup plates thus arranged on a good, heavy pillow, and cover it with another pillow, pressing the pillows so that the plates are completely embedded in them. An old jack-plane set deep is a most excellent thing with which to shave ice. It should be turned bottom upward, and the ice shoved backward and forward over the cutter."

A MEDICAL INDEX.—*The Times and Register* has commenced the publication in its columns of a Medical Index which will contain a list of original articles published in exchanges, especially those of interest to the practitioner.

ALL HONOR TO HIM.—*The Albany Medical Annals* relates the following: One of the bright spots in the Johnstown disaster is furnished by a member of our profession. Among the mass of shattered humanity was Dr. Matthews. He had himself sustained the fracture of several ribs; but with the loyal instinct of the right-hearted physician he devoted himself to those about him who, with broken limbs and otherwise gravely hurt, were in need of some surgical help, besides cheering them with encouraging words. In the scattered and disjointed reports we have had but

a glimpse of this scene, but when the history of the great event is connectedly written, it is to be hoped that this episode will be found true and due honor given to the hero of it.

BIRTH RETURNS.—The *Medical Record* quotes the following from the *New York Herald*: Massachusetts has a new statute, which has just gone into effect, for securing a more perfect record of vital statistics. All doctors are required to report births, and for each birth reported the doctor gets a fee of twenty-five cents. No penalty is fixed for failure to report. This little fee is no great object, yet it is proper as recognizing that the State has no right to exact a gratuitous service from medical men—which it does when it calls for a whole series of certificates that must be given under penalties for failure, as with doctors in this city. The language of the Massachusetts statute is odd. It requires the doctor to report all births "at which he is present." Suppose the baby is born before the doctor gets there.

The New York County Medical Association has a special committee for the purpose of considering the certificate-grievance, with the view of securing as well more complete returns. A professional friend solemnly assures us that half his life is spent in writing certificates for life insurance, schools, judges, societies, and all kinds of health organizations. Great Britain and, we think, Germany wisely throw the responsibility of returning births upon the parents themselves. At all events, the legal opinion is that the State has no power to impose any service without providing a compensation.

FOREIGN.

A NEW USE FOR FLAGS.—The medical department of the Paris University will use a flag whenever a confinement is in progress in the lying-in wards. A blue flag indicates a simple confinement, a yellow flag a difficult labor, and a green flag that an operation may be necessary.

FRENCH CONGRESS OF SURGERY.—The fourth meeting of the French Congress of Surgery will be held in the large amphitheatre of the School of Medicine, Paris, from October 14 to 20. The following questions will be taken in the order of the day of meeting: 1. Results, direct and remote, of practical operation for local tuberculosis. 2. Surgical treatment of peritonitis. 3. Treatment of aneurism of limbs. Baron Larrey will preside.

Dr. S. Pozzi, 10 Place Vendome, Paris, is the Secretary-General of the Congress.

LOW MORTALITY AMONG THE FRENCH TROOPS.—The health of the French army is constantly improving. The death-rate has fallen to 7.58 per 1000. This is the lowest point yet reached in this army, and it is lower than has been reported concerning any other of the European forces. The troops in Tunis exhibit the highest rate of mortality, about 19.4 per 1000. The disease which figures most prominently among the causes of death has been typhoid fever, which gives about one-tenth of the admissions to the hospitals, but even in this respect the conditions show a manifest improvement.

THE HEALTH OF THE POPE.—The age of Leo XIII is said to be 82 years, but his health is firmer and better than it was twelve years ago when he became Pontiff. He is described as active, robust and hearty for one of even a less advanced age, and he speaks of himself in far more promising terms than he did twelve years ago, when he told his friends that it would be useless to make him Pope, for he had only a few months to live, and his appearance then did not belie his words.

HYDROPHOBIA IN BRAZIL.—The *Lancet* contains an abstract of the first annual report of the Pasteurian Institute at Rio de Janeiro. It comprises the data of the work performed during the first eleven months of its existence. The first patient was received February 9, 1888, between which date and January 8, 1889, one hundred and six persons were treated for hydrophobia, with only one death. Sixty-two of the patients were undoubted cases of biting by dogs having rabies. The death is reported to have been the case of a young child who was not long enough under treatment to allow of the full Pasteurian method.

IN INDIA the *Indian Medical Gazette* has a vigorous article dealing with the need of an Imperial Sanitary Board. A new Women's Hospital is to be erected at Kurrachee at a cost of 40,000 rupees. Calcutta will soon be provided with an Ophthalmic Hospital through the liberality of a native gentleman, Baboo Churn Lahaa. Dr. Lall Madhull Mookerjee is the President of the Calcutta Medical Society. Typhus fever is epidemic in the Rawal Pindi districts.

TOPICS OF THE WEEK.

OCEAN CLIMATIC THERAPEUTICS.

The following are some of the things well said by DR. ALBERT L. GIBON, Medical Director U. S. Navy, in his Address before the American Climatological Association, in June last.

First, if season, course, and destination be judiciously chosen, the invalid will obtain, on a long voyage, in a comfortable sailing vessel, *rest*—of mind and body—a condition of absolute insouciance, and relief from the cares and distractions, the daily worries and anxieties of life, the interruptions and noise and turmoil and excitements which railroads, telegraphs, and newspapers bring into the very sick-room on land.

If not so completely bed-ridden (in which case he probably ought not to go to sea at all) but that he can lie in an easy chair on deck, he will be able to breathe and bathe in an air that is barren of every impurity, and with every inspiration experience a sense of pleasurable invigoration.

If sea-sickness is not an indomitable idiosyncrasy, as I have known it to be even in captains of the navy, he will, after a few days, when he "gets his sea-legs," as sailors term it, find inexpressible delight in pacing the narrow bounds of the quarter-deck, and lengthen the hours of this gentle exercise until they become whole watches long.

Once accustomed to the motion of the vessel and of the sea, nausea will give place to appetite, which is sharpened as well for old salts as land-lubbers, and the plainest food will be taken with unwonted relish, betokening improved assimilation. If care be had to overcome the usual tendency to constipation, ingestion may go on without restraint. The eagerly anticipated meal-hours become the eventful marks of the passage of time. The whilom patient eats and sleeps, and wakes to find new zest in the simple employments of the day. Rocked in the cradle of the deep, the ocean's lullaby soothes the sufferer into forgetfulness of his ills. . . .

Next to the transitory exposure to ocean climate in the course of a sea-voyage is the residence on some small mid-ocean island where there are few vicissitudes of weather, short range of temperature, and none of the physical befolements from masses of men and animals or decaying vegetable matter. Here, even better than on shipboard, is to be found the opportunity for making ocean climatic influences available as curative measures. . . .

The therapeutic agencies which operate upon the broad ocean—rest, pure air, equable temperature and moisture, and the minimum of disturbing causes, are to be found in almost as great degree on the ocean islets, where the sound of rippling springs, the sight of fresh verdure, and the scent of earth replace the monotony of the horizon-bound disk of water.

These islets are dotted over the sea—numerous in Oceanica, where distance and rare opportunities of communication place them beyond convenient and frequent access—less numerous but easily reached in the Atlantic,

where midway between the continents they invite the weary broken down sufferers in mind and body to find rest and sweet oblivious antidote for all their ills. The Azores, Madeiras, and Canaries are the chief among these "isles of the blest." The former, especially Fayal, about two thousand miles, ordinarily a pleasant fortnight's run from Boston, offer a climate so mild, that one need hardly look for a better, were it not that the better is to be found at Madeira, and a best of all at Orotava on the Island of Teneriffe, one of the group of the Canaries—*Las Canaris* of the Spanish, the *Insule Fortunatæ* of Roman geographers, whose mountain peaks stand above the waters like tombstones in this ocean cemetery, where a continent and its millions of Atlantean inhabitants are buried.

The Madeiras are but five hundred miles from the Azores, and the Canaries two hundred farther south, so that the way is easy to that delightful spot, which Humboldt thanked God he had lived to behold—the valley of Orotava, fit garden of another Eden, where he who would begin life anew may find everything save the vice and artificialities and malefic agencies of modern civilization.

Is it not time to stop and ask ourselves whether it be not the better part to place our patients where, amid Heaven's boundless supplies, the wiser air-cells, and blood-vessels, and lymphatics may themselves select just what they most require—where pure air and water, and good food, cooked to tempt the palate with half the art in making pretty portions to please both eye and taste, shall be the tonics to regenerate the blood till it revivify the worn-out nerves, repair the wasted tissue, and set once more in healthy play the vital machinery which animates and gives the body being? Mere drugs cannot do this, and drugs needlessly, excessively wrongfully administered, can only retard it. The pharmacist may oftentimes be idle, but the therapist's task will be no lighter, for climato-therapy requires sound judgment, wise and discriminating adaptation of natural agencies, and the same watchful observation of the grade of action shown by the pulse, the condition of the organic fibre, and the state of the secretions, which are the sum of the physician's duty, however huge his pharmacopœia. If he can preserve tissue from destructive change, keep the emunctories in active play, and control the pulse's fitful beat, he may patiently bide his time for those forces to exert their power, which out of the germinal vesicle make the perfected man—out of the stomach's bole, the blood's living corpuscles, and out of these the sentient flesh and conscious brain.—*Medical News*.

THE MEDICAL SOCIETY OF DELAWARE.

This organization dates back to 1789, and accordingly this is its centennial year. The annual address delivered by W. T. SKINNER, M.D., of Glasgow, Del., is replete with historic as well as medical interest. We would be pleased to publish the entire address as found in *The Medical Bulletin*, but must content ourselves with a few brief extracts:

"The Medical Society of Delaware is one of the oldest institutions of the kind in this country, being probably

antedated only by the Massachusetts and New Jersey Medical Societies," and, to use a somewhat trite expression, it had its birth in the "times which tried men's souls." The colonies had, it is true, gained their independence, had adopted the constitution, and had just inaugurated George Washington, in New York, as the first President of the United States. But it was not all smooth sailing yet. We are told that the nation was confronted by grave financial embarrassment; its energies as well as its resources seemed exhausted by the prolonged struggle through which it had just passed. The people, so long accustomed to war, were now ill fitted for the pursuits of peace, and, feeling very keenly the pinch of hard times, soon began to be discontented, and rebellion threatened even the very existence of the newly organized Government.

Of the medical men whose services were so indispensable to the existence of our country in its earlier days none were more distinguished than those of Delaware. The first President of this Society, Dr. James Tilton, was a man of broad culture, and his distinguished services throughout the Revolutionary War very justly entitle him to be named as one of the trio of great men in the profession in that day, namely: Rush, Warren, and Tilton. He had the honor, as you know, to be elected to a professorship in the University of Pennsylvania, which he declined, in order to continue in his country's service, and upon the breaking out of the war of 1812-15 he was made Surgeon-General of the United States.

Dr. Joseph Philip Eugene Capelle, another one of the corporators of this Society, served upon the staff of Lafayette, and when the great general was wounded at the battle of Brandywine Dr. Capelle was the first to offer him surgical aid. Of Dr. Edward Miller, another of the patriots of the Revolution, and one of the charter members of this Society, its first Secretary, and the first to deliver the annual oration before it, the great Rush declared that "he was second to no physician in all this country."

It does not come within my scope to give an historical sketch of the members of our Society, the historian of the day has already attended to this part of the programme; but I have cited a few examples only from his statements, to show you that "our ancient record is an honorable one." "There were giants in those days," men who were further in advance of the times in which they lived than any we now number in our membership.

For one hundred years the meetings of the Medical Society have been the Mecca to which the faithful have journeyed once a year. Yes, journeyed is the term, for it must have taken at least three days for a man from Wilmington or Sussex to attend a meeting here in Dover—one to come, one to attend the meeting, and one to return home again. But to-day we step aboard of a fast train, have agreeable companions, and after spending an hour or so pleasantly chatting and, as the train proceeds, constantly deriving new pleasures by being joined at every station by old friends whom we have not seen since our last meeting, we reach our destination and find ourselves all together, Sussex, Kent, and New Castle. I will not

attempt to describe what follows. It is a grand old reunion, and yet I doubt that so large a percentage of the medical fraternity attend its meetings to-day as there did in those good old days.

EFFECTS OF CORROSIVE SUBLIMATE.

The following symptoms have been observed in cases of poisoning caused by vaginal or intra-uterine injection with corrosive sublimate:

The alimentary canal. Thirst, foul breath, metallic taste, red or bluish color and swelling of the gums; redness, ulceration and sloughing of different parts of the mucous membrane of the buccal cavity; deep ulcers in the tonsils; soreness and looseness of the teeth, and sometimes salivation; vomiting, abdominal pain, tenesmus; profuse stinking, often bloody, diarrhoea. The feces contain mercury. It has been found in numerous cases after vaginal or intra-uterine injections of a solution of 1:3000, followed by the injection of plain water. Even when the solution was so weak as 1:4000, it was found in one case, but in the others not. In the majority of cases it is found the next day, and it is yet found a long time after discontinuing the use of the bichloride.

The uropoëtic system. There is a marked diminution in the amount of urine, rising to absolute suppression of the secretion. The urine is dark, grumous, contains much albumin, mercury epithelial cells from the kidneys and hyaline or granular casts.

The skin is often wet with perspiration; it has been found hyperæsthetic, itching, pale or erythematous. Sometimes there is considerable swelling of the subcutaneous tissue.

The nervous system. In the beginning the patient is restless, and suffers from insomnia; later she becomes drowsy, sometimes delirious; and finally she collapses. In some cases spasmodic twitchings or cataleptic stiffness has been found in the extremities. The pupils are sometimes contracted as in opium poisoning. Sometimes there is a sensation of being choked.

The pulse is rapid and weak, the temperature subnormal.

Of these symptoms the most characteristic are the diarrhoea, the diminution or suppression of the urinary secretion, the stomatitis, the low temperature, and the presence of mercury in the urine and the stools, which may be found by chemical analysis.

The chief changes found after death are hæmorrhagic infiltration and extensive ulceration, sometimes diphtheritic patches and sloughs of the large intestine. In some cases a lower degree of inflammation is found in the ilium. Exceptionally, the œsophagus has been found inflamed. In some cases there has been found local peritonitis.

In the mouth and throat are found the above-mentioned changes.

Another constant change is parenchymatous nephritis. Sometimes deposits of phosphate of lime are found in the convoluted or straight tubules, but these calcareous deposits are often absent, and may, on the other hand, be found under different circumstances.

In some cases the substance of the brain was found dry; in other there were extravasations of blood in the meninges.—GARRIGUES, *American Journal of the Medical Sciences*.

SOCIETY PROCEEDINGS.

American Ophthalmological Society.

Twenty-Fifth Annual Meeting, held at Pequot House, New London, Conn., July 17 and 18, 1889.

(Concluded from page 210.)

DR. EMIL GRUENING, of New York, read a paper on

THE USE OF THE CURETTE IN ANTERIOR TRACHOMA.

The speaker often referring to the various measures proposed for the relief of this condition, described an operation which he had employed in eleven eyes during the past ten years. A 6 per cent. solution of cocaine was first instilled. The surface of the cornea and the vessels present were then scraped away with a gouge-shaped instrument, and the vessels followed well on to the conjunction. The eye is then washed with boric acid solution, and warm compresses applied for four or five days. In three cases new vessels formed, and the operation was repeated. The ultimate result in all the cases was highly satisfactory. In old and protracted pannus, this operation may be recommended for its directness, simplicity and efficacy.

DR. S. D. ST. JOHN, of Hartford: I have used this operation in one case with the highly gratifying result of increasing the vision from $\frac{1}{200}$ to $\frac{1}{60}$. This has since still further improved.

DR. H. F. HANSELL, of Philadelphia, read a paper on

CORNEAL ABSCESS.

Describing its symptoms and referring to the differential diagnosis between it and ulcer. He protested against the use of cocaine in abscess or other inflammatory conditions of the cornea. A few drops of a strong solution will often destroy the epithelium. Instillation of eserine alternating atropine was recommended. Operative interference should be limited to evacuation of the pus.

DR. CHARLES J. KIPP, of Newark, read a paper entitled

FURTHER OPERATIONS ON MALARIAL KERATITIS.

The author had called attention to this condition in a paper read before the Society in 1880. He had seen 120 cases of the disease. In all there had been paroxysms of malarial fever, and in 90 per cent. the corneal inflammation followed a few days after a paroxysm. In 25 per cent. the patients had suffered from similar trouble in previous attacks of malaria. The inflammation of the cornea occurred in the form of respiginous ulceration, with narrow prolongations. The

trouble began as a line of small grayish elevations, which soon broke down, forming a furrow of ulceration. In mild cases the duration is two or three weeks, while in severe cases it may last several months. There is a marked tendency to recurrence in subsequent attacks of malarial fever. In a few cases he had seen a similar affection in non-malarial individuals. The treatment consists in remedies directed to the general condition and in mild cases with warm fermentation. In severe cases a 1 per cent. or a 2 per cent. solution of nitrate of silver applied directly to the furrow after the use of cocaine answers well. In some very severe cases the actual cautery was employed. This arrested the progress of the disease and stopped the pain, provided the malarial trouble had previously been cured.

DR. HENRY D. NOYES, of New York: During the past fifteen or 20 years, I have met with cases of superficial keratitis due to malaria. It is rare to find the deeper tissues invaded. I am led to suspect a malarial origin in cases where there is exaggerated tenderness of the supra-orbital nerve and distinct anæsthesia of the surface of the cornea. The form of ulcerative keratitis which has been described I regard as of mycotic origin, and have cured it by scraping thoroughly the lines of infiltration.

DR. T. Y. SUTPHEN, of Newark: I have seen cases similar to those described by Dr. Kipp, in patients suffering with malaria, and where there has been no distinct chill, the individuals have resided in malarious districts.

DR. JOHN GREEN, of St. Louis: I have seen many cases in which malarial fever was followed by superficial keratitis, or keratitis modified by neglect or improper treatment. I have not met with the form described by Dr. Kipp.

DR. EMIL GRUENING, of New York: I have seen this form of ulcerative keratitis, but I have associated it with the teeth. These patients have had tartar on the teeth, and have been in the habit of moistening the lids with saliva. I think therefore that the source of infection is in the mouth.

DR. SAMUEL THEOBALD, of Baltimore: I have also seen for many years this keratitis associated with malarial trouble. These cases do not always show ulceration of the cornea. I have in a general way regarded this condition as analogous to herpes zoster. I have once or twice seen iritis associated with the keratitis following malaria. In one case of malaria I have seen this keratitis with herpes zoster of the temple.

DR. J. A. LIPPINCOTT, of Pittsburgh, read a paper on

IRRIGATION OF THE ANTERIOR CHAMBER.

This procedure is useful for the removal of débris in cataract extraction and of clotted or liquid

blood. In order to accomplish this successfully it is necessary to have an apparatus which can be readily made and kept aseptic; which will always be ready for use; which can be easily handled and the movement controlled with one hand; whose ejecting force is capable of being easily regulated; and which is free from liability of forcing air bubbles into the anterior chamber. As fulfilling these requirements he exhibited an apparatus consisting of a small metal receptacle with which was connected a rubber tube ending in a metal nozzle; the flow of liquid being controlled by a short piston in a rubber handle through which the rubber tube passed. The ejecting force can be varied by elevating or lowering the receptacle.

DR. E. GRUENING, of New York, exhibited a small flask devised by von Graefe for the same purpose.

DR. DAVID WEBSTER, of New York, exhibited two specimens of sword fishes' eyes.

DR. HENRY D. NOYES, of New York, exhibited a spectacle frame in which the nose-piece of the eye glass was combined with the ordinary spectacle frame.

DR. HENRY D. NOYES, of New York, read a paper on

ENUCLEATION OF THE EYE IN PANOPHTHALMITIS.

There have been reported by observers thirty or forty deaths following enucleation, almost all from meningitis. About one-half of the fatal cases have occurred after enucleation during acute suppurative panophthalmitis. At the New York Eye and Ear Infirmary there have been no deaths from this cause when no additional operations in the orbit, such as the removal of tumors, etc., have been done. The number of enucleations from 1868 to 1888 was 1,164; the number of eviscerations seventeen. Panophthalmitis existed in 14 per cent. of the cases. It seems fair to conclude that whilst a small risk to life is incurred by enucleation of the eye, the supposed increased risk by the existence of suppurative panophthalmitis is not so far justified by the facts as to bar its performance in this condition.

AFTERNOON SESSION.

DR. H. KNAPP, of New York, read a paper on
THE TREATMENT OF CARIES AND NECROSIS OF
THE ORBIT.

The upper wall of the orbit is the most frequent seat of disease and here its consequences are most dangerous. In every case of caries and necrosis of the orbit the condition of the neighboring cavities, and especially the nose, should be carefully investigated. Foci of suppuration should be freely opened, the cavity thoroughly cleansed and drainage established. This can be well accomplished by small silver tubes provided with flanges. Rough bone should be scraped away with a sharp spoon. Necrosed portions of bone should

be removed as soon as they become loose or when they can be detached without injury to adjacent tissues. The eyeball should be protected, and if there is insufficient closure of the lids, a plastic operation should not be postponed until the cornea becomes ulcerated from exposure.

DR. H. W. WILLIAMS, of Boston, read a paper on

MULTIPLE CYSTS OF THE IRIS OCCURRING IN BOTH EYES.

The subject was a girl 9 years of age. In the right eye there was a projection resembling a large cyst extending from the upper margin of the pupil. A similar growth projected from the temporal border. At the inner margin there were two small pedunculated growths. All were of the color of the iris. In the left eye, two somewhat oval cysts filled the pupillary space. Through the square opening left in each pupil there was a little oblique vision.

DR. T. Y. SUTPHEN, of Newark, read a paper on

SARCOMA OF THE OPTIC NERVE.

The patient was 10 years of age. The tumor involved the left orbit and was of two years' duration. It was mushroom-shaped and sprang from the optic nerve. Its size was $6 \times 5\frac{1}{4}$ inches, and 2 inches thick. It was readily removed with curved scissors. As much as possible of the nerve was removed.

DR. GEORGE C. HARLAN, of Philadelphia, read a paper on

EXTENSIVE VASCULAR GROWTH IN THE VITREOUS.

The patient, a woman *æt.* 50, presented herself November 29, 1888, on account of disturbance of vision. Examination of the right eye showed the fundus to be slightly hazy, with small, dull white spots about the macula, the remains of old hæmorrhages, but no recent exudation. The disc was obscured by a delicate network of vessels. Otherwise there was no opacity. There was no stroma. Up to March 2, 1889, there had been several retinal hæmorrhages, but there had been no change in the vascular membrane. Vision had been reduced to $\frac{2}{10}$.

DR. O. F. WADSWORTH, of Boston, described two cases of

EXTRACTION FROM THE VITREOUS OF PIECES OF STEEL BY THE MAGNET,

in which the piece of steel was removed by passing an electro-magnet into the vitreous through an opening in the sclera. In the second case, the operation was followed some weeks later by a separation of the retina beginning at a point opposite that at which the puncture was made.

DR. J. O. TOMLEY, of New York, read a paper on

CORNEAL TRANSPLANTATION.

The speaker reported a case in which he had done this operation for opacity of the cornea. At

the first operation the opacity was not removed to its full depth, and although the cornea cleared to a certain extent the result was not satisfactory. The operation was therefore repeated, but without any improvement in vision. In both operations there was primary union of the graft and in neither was there any inflammatory reaction.

DR. L. WEBSTER FOX, of Philadelphia: I have performed the same operation in a case of opacity of the cornea where the patient could just distinguish light from darkness. The graft healed readily without inflammatory reaction, and the patient obtained useful vision and could almost count fingers.

DR. CHAS. A. OLIVER, of Philadelphia, read a paper entitled

AN ANALYSIS OF SOME OF THE OCULAR SYMPTOMS
OBSERVED IN SO-CALLED GENERAL PARESIS.

These operations were made on twenty well-marked cases of general paralysis of the insane. The study was limited to subjects in the so-called second stage of the disease, where the psychical symptoms had become of such a character as to necessitate control and where motor and sensory derangement had become more or less manifest. Care was taken that each subject was seemingly free from any extraneous general disease or local disorder, and the entire study was limited to the male sex, so as to escape any conflicting or complicating changes that might appear in connection with the many diseases peculiar to the female sex. Thirty observations were made, resulting in the following summary:

1. The sensory changes herein described, which have been limited to unequal optic nerve degeneration, decrease of retinal circulation, with sub-normal direct and excentric vision for both form and color, distinctly show lowered sensory response.

2. The motor symptoms, consisting in unequal and feeble movements of the irides, causing inequality and irregularity of pupillary areas, the peculiar form of ataxic nystagmus, the slight loss of ciliary tone, all express want of proper muscle action—true paresis.

3. The peculiarly local conditions shown in the fundus, such as the pigment massings, the crescents of absorption, the disturbed and granular condition of the choroid, etc., all indicate wear and tear of an abused and irritated organ.

4. Therefore these observations upon the ocular apparatus, which were most probably made during the second stage of the disease known as general paralysis of the insane, show not only local changes, but distinctly demonstrate that the series of sensory motor disturbances found, are but the peripheral expressions of one of the many indices of gradual loss of neural strength and power in this disease.

DR. GEORGE C. HARLAN, of Philadelphia, re-

ported *A Case of Hysterical Blindness* of ten years' duration in a male 22 years of age.

DR. SAMUEL B. ST. JOHN, Hartford, described *A Case of Hemianopsia* with peculiar cerebral symptoms.

DR. B. ALEX. RANDALL read a paper on *Simple Tests of the Ocular Muscle*.

DR. T. V. SUTPHEN, of Newark, N. J., reported

A CASE OF DOUBLE PURULENT CHOROIDITIS RESULTING FROM MENINGITIS.

February 23, 1887, was called in consultation to see G. W. B., a robust farmer, æt. 39 years. He had always been healthy with the exception of an occasional "bilious headache." Never had had any specific trouble. The history was that on February 9 he came in at noon perspiring very freely. That evening he suffered with intense headache. The next morning he was apparently well, but at breakfast had a violent chill with aching of the whole body. This was followed by high fever. Leaving the breakfast table was the last that the man remembered for three months. From this time the patient rolled and tossed in bed without decided delirium, but being in a stupid condition and easily restrained. Questions were answered only after frequent repetition and the replies ran off into complete incoherence. On the third day of the illness the body became quite rigid with the head thrown backwards. On the fourth day, the left hand and forearm became swollen and the right eye inflamed. The left eye became inflamed on the tenth day. Later the left foot became swollen. The swelling of the hand and foot lasted about a week and then subsided. The fever then became less violent and the general condition improved, but the mental sluggishness remained. There was no paralysis, no convulsion, no vomiting. At the end of the third week he had a slight chill, and another after he was out of bed.

At present the man is apparently in good health. He has lost none of his functions and the mind is perfectly clear. When first seen by the writer the eyes were in the following condition: No swelling of the lids; moderate pericorneal injection; cornea clear; anterior chamber normal in depth; irides slightly discolored. Pupils moderately dilated, with a yellowish reflex from the anterior portion of the vitreous. There was no perception of light. No tenderness on pressure, but a marked lowering of the tension of the globe. Three days later, the anterior chamber in each eye was obliterated by pressure from behind the lens, the eye-balls being harder than normal. One week later, the anterior chamber was again restored and tension had again fallen much below the normal. From that time there was progressive atrophy of both eyes until now there is left only the greatly shrunken globes, with, of course, absolute blindness.

In this case there must have been an extension of the intracranial inflammation along the sheath of the nerves and not a forcing of the products of inflammation forwards, as sufficient pressure within the cranium to produce this must evidently have become apparent by more or less paralysis.

The case is reported simply as a clinical contribution to this somewhat rare and obscure trouble, which is certain to be met with in the course of practice.

THURSDAY, SECOND DAY.

DR. O. F. WADSWORTH, of Boston, reported a case of *Torticollis Cured by Tenotomy of the External Rectus*.

DR. MYLES STANDISH, of Boston, read a paper on

PARTIAL TENOTOMIES IN CASES OF NEURASTHENIA WITH INSUFFICIENCY OF THE OCULAR MUSCLES.

The author reported five cases in which he had performed this operation on account of constant headache, inability to use the eyes and neurasthenic symptoms. In all but one there was marked and prompt relief of the local and general symptoms by the operation. Cases requiring operation are comparatively rare.

DR. DAVID COGGIN, of Salem, read a paper entitled

NOTES ON SOME VAGARIES OF ACCOMMODATION.

A case was of hypermetropic astigmatism passing into myopia. A case of recurrent spasm of accommodation was also reported. The third case was one of temporary anomaly of sight occurring daily. In the morning could see well, but in the afternoon could not distinguish objects across the street. Double vision also occurred. The disturbance is gradually disappearing.

DR. E. E. HOLT, of Portland, read a paper on the

EFFECT UPON THE ACCOMMODATION OF A PATIENT'S EYE CAUSED BY LOOKING INTO THE MIRROR SET OBLIQUELY IN THE ROOM DURING OPHTHALMOSCOPIC EXAMINATION.

Directing the patient to look with one eye into a mirror set obliquely while the other was examined with the ophthalmoscope, an element of ease was found in making the examination, and of comfort and steadiness on the part of the patient never experienced before. The eye fatigues quickly in looking at a single object. Looking into the oblique mirror gives the impression of gazing into the distance. A notable change in the pupil will be observed when the patient is directed to look at an object at the distance of the mirror, and when he is directed to look at objects reflected from it.

DR. O. F. WADSWORTH, of Boston, read a paper on

PARALYSIS OF THE SPHINCTER IRIDES.

A case was reported of paralysis of the sphincter irides, without affection of the accommodation lasting several months, and following the instillation of homatropine in both eyes.

DR. SAMUEL THEOBALD, of Baltimore: In all such cases it is important to exclude malingering. It would be possible for the patient by the use of a weak solution, to keep up the mydriasis without affecting the accommodation.

DR. SAMUEL D. RISLEY, of Philadelphia: Another protracted explanation of such cases is the use of pipette previously used for a solution of a mydriatic, for a solution which contains no mydriatic.

DR. JOHN GREEN, of St. Louis, presented a series of *Geometrical Constructions, illustrating certain cases of oblique pencils refracted at cylindrical and spherical surfaces*.

DR. JOHN GREEN also read a paper on *Some of the Stereoscopic Alterations Evoked by Unequal Glasses placed before the two Eyes*.

DR. SAMUEL THEOBALD, of Baltimore, read a paper on

THE EMPLOYMENT OF OLEATE OF VERATRIA TO FACILITATE THE DETERMINATION OF ERRORS OF REFRACTION.

A mydriatic affords valuable aid in myopia and in hypermetropia, but in astigmatism its use is not so satisfactory. In astigmatism he had found great help from the use of a 10 per cent. oleate of veratria to the temple and forehead once a day for three or four days. This seems to exert a quieting effect upon the ciliary muscle, and especially of the radiating fibres and lessens the tendency to a symmetrical accommodation. The following rule was formulated in regard to the correction of astigmatism: When the astigmatism is according to the rule, we need correct only that which is readily made manifest. On the other hand in astigmatism against the rule, we are warranted in arresting fully every part of the defect which can be rendered manifest.

DR. E. E. HOLT, of Portland, read a paper on

THE INEFFICIENCY OF HYDROBROMATE OF HOMATROPINE IN CONTROLLING THE ACCOMMODATION FOR THE PURPOSE OF FITTING GLASSES.

The experience of the writer was that this drug could not be relied upon. He reported one case in which the lateral hypermetropia revealed by 3 per cent. solution of hydrobromate of homatropine, was just one-half of that revealed by 1 per cent. solution of atropia.

DR. EDWARD JACKSON, of Philadelphia: I have found homatropine entirely satisfactory

when used properly. The instillations must be repeated at short intervals five or ten minutes, and three or four instillations practiced. The effect rapidly passes off, and the examination must be made within one or two hours. I have followed the use of homatropine by another mydriatic without alteration in the result.

DR. EDWARD JACKSON, of Philadelphia, read a paper on

AMETROPIA AS DETERMINED UNDER COMPLETE MYDRIASIS.

He had examined 4,000 eyes under complete paralysis, and presented the following table of his results. These were compared with results obtained by another observer :

	With Mydriasis.	Without Mydriasis.
Compound hyperopic astigmatism. . .	40 $\frac{0}{100}$	9 $\frac{1}{2}$ $\frac{0}{100}$
" myopic " " " " " "	9 $\frac{0}{100}$	11 $\frac{0}{100}$
Simple hyperopic " " " " "	6 $\frac{0}{100}$	16 $\frac{1}{2}$ $\frac{0}{100}$
Simple myopic " " " " "	2 $\frac{0}{100}$	24 $\frac{0}{100}$
Mixed astigmatism	6 $\frac{1}{2}$ $\frac{0}{100}$	2 $\frac{0}{100}$
Hyperopia	31 $\frac{0}{100}$	10 $\frac{0}{100}$
Myopia	4 $\frac{0}{100}$	9 $\frac{1}{2}$ $\frac{0}{100}$
Emmetropia	1 $\frac{1}{2}$ $\frac{0}{100}$	17 $\frac{1}{2}$ $\frac{0}{100}$

DR. JACKSON also presented a paper on *Ac-curacy in the Prescription of Prisms*.

DR. W. S. DENNETT, of New York, read a paper in which he suggested a *New Unit of Angular Measurement for Prismatic Glasses*.

DR. GEORGE C. HARLAN, of Philadelphia, exhibited *Periscopic Cylindrical and Sphero-Cylindrical Lenses*.

DR. W. F. MULTENDORF, of New York, reported

A CASE OF AMBLYOPIA DUE TO CHLORAL HYDRATES.

The object was to put on record a case of toxic amblyopia, due to chloral hydrate. The patient had for six months been in the habit of taking 40-60 grains of the drug at night to induce sleep. Suspension of the drug relieved the amblyopia.

EXECUTIVE SESSION.

Officers for ensuing year : President, Dr. Hasket Derby, Boston ; Vice-President, Dr. George C. Harlan, Philadelphia ; Secretary and Treasurer, Dr. Samuel B. St. John, Hartford ; Corresponding Secretary, Dr. J. S. Prout, Brooklyn ; Delegate to the Executive Committee of the Congress of American Physicians and Surgeons, Dr. John Green, St. Louis ; Alternate, Dr. D. B. St. John Roosa, New York.

The following were elected to membership : Dr. Carl Koller, New York ; R. A. Reeve, Toronto, Canada ; Dr. David Harrower, Jr., Worcester, Massachusetts ; and Dr. George E. de Schweinitz, Philadelphia.

The Society then adjourned to meet at the Hotel Katerskill, the third Wednesday of July, 1890.

American Otological Society.

Twenty-second Annual Meeting, held at the Pequot House, New London, Conn., July 16, 1889.

The Society was called to order by the President, DR. J. S. PROUT, of Brooklyn.

DR. B. ALEXANDER RANDALL, of Philadelphia, read the first paper, entitled

INFLAMMATION OF THE TYMPANIC ATTIC AND PERFORATION IN SHROPNELL'S MEMBRANE.

The author reported twenty cases, fifteen of which had been seen in the past six months, and urged that the condition was not a rarity. It often coexists with one or more perforations of the other parts of the drum head. If sought and recognized early, it is a less tedious and serious matter than these attic inflammations are generally considered to be. He cited some 120 cases reported by several observers among 10,000 patients, and while he had seen a still larger proportion, accepted this as the average. Passing over the treatment as having been already thoroughly discussed, he turned to the question of causation, and cited the view of Walb that infection from without through a "foramen Ravinii" was the starting-point. Contesting this view as to any colobomatous opening in the flaccid membrane as wholly negatived by modern embryologists, he urged that the individual variations in the septa in the attic predisposed some cases to localized inflammation and led to perforation at this point ; and that these cases, neglected or recurrent, formed the group from which the usual obstinate cases were derived. He therefore advocated scrupulous search in all cases for disease in this locality as promising to nip in the bud what might later become disease notoriously difficult to control. The paper was illustrated by drawings and photographs of specimens.

DR. S. O. RILEY, of Philadelphia : I have frequently seen perforations elsewhere associated with perforations in Shropanell's membrane. The presence of perforations in other parts of the drum membrane does not exclude its presence in Shropanell's membrane.

DR. J. O. TANSLEY, of New York : I have never met with perforation of the drum to which the doctor refers, associated with perforation in other parts of the drum. A singular thing is that we so rarely get the perforation whistle.

DR. S. O. RICHEV, of Washington : I do not think that perforations of Shropanell's membrane are so common as has been stated. My experience with the absence of perforation whistle corresponds with that of others. I have had cases in which perforations in other parts of the drum healed but the perforation in Shropanell's membrane persisted. In treating these cases, besides using measures through the external auditory

meatus, I have employed injections through the catheter consisting of nitrate of silver 1 part, boric acid 10 parts, glycerine 20 parts and water 500 parts.

DR. GORHAM BACON, of New York: I have not observed this condition so frequently as Dr. Randall. It is often difficult to see these perforations. In treatment I have generally used Blake's extra-tympanic syringe. By persistent syringing and the use of astringents, cicatrization is often produced. These cases are, however, very tedious.

DR. J. A. ANDREWS, of New York: In treating these cases in which there is purulent inflammation of the attic with a large hole in Shroppell's membrane, after injecting the cavities, I wash out the fluid by means of this instrument, consisting of a delicate metal tube with a curved extremity to which is attached a rubber tube. I use simply a boric acid solution. After washing out the fluid I dry it with cotton wrapped on a probe. I then blow in a fine cloud of boric acid.

DR. HERMAN KNAPP, of New York: There is a capital difference between perforations in the upper and those in the lower part of the drum membrane. Those in the lower part may close in a few days, while in the upper part they may continue for months or years. I think this is due to difference in anatomical structure. The lower portion is a specific tissue with little association with periosteum, while the upper part is a duplication of periosteum and skin. When the latter part is affected the process extends to the periosteum, leading to caries and necrosis of the bone.

DR. F. M. WILSON, of Bridgeport, Conn., reported

THREE DEATHS FOLLOWING SUPPURATIVE OTITIS, WITH TWO AUTOPSIES.

Cases in which death follows a first attack are so rare that it was thought of value to report these cases. The first patient was æt. 40 years, who for two weeks before coming under observation had had pain in both ears. February 27, 1888, the pain in the left ear became very intense. March 1 he became partially unconscious and remained so, with occasional convulsive movement, until March 6, when he died. The mastoid was drilled $\frac{1}{2}$ inch but no pus found. No autopsy was made.

The second case was a male æt. 23 years, who was attacked with subacute otitis March 11. Symptoms of meningitis appeared, with high temperature, and he died March 27. At the autopsy one-third of the base of the cerebrum was involved in the purulent process, which extended up under the frontal convolutions. There was about $\frac{1}{2}$ oz. of turbid fluid between the dura mater and inner meninges. There was pus in the labyrinth and in the tympanic cavity.

The third case was that of a boy æt. 10 years,

who was attacked with suppurative otitis September 5 and died about ten days later. At the autopsy the meninges were found normal, but an abscess containing 2 drachms of fluid was found in the cerebellum.

Dr. Wilson also presented a *Mastoid Drill*, provided with a guard which could be set at any desired point, regulating the distance to which the drill entered. The edges of the drill are sharp, so that the opening can be enlarged horizontally to any desired extent.

DR. GORHAM BACON, of New York: It seems to me that in these cases where we do not find any collection of pus in the mastoid cells, we are justified in investigating the condition of the brain.

DR. J. O. TANSLEY, of New York: I have had several of these cases, and have without success sought for some means by which we could differentiate between those cases in which there was meningitis and those in which there was abscess. In one case, Dr. Seguin made a diagnosis of abscess based upon conjugate deviation of the eyes. Subsequent autopsy showed the correctness of this diagnosis. In another case I suspected abscess. Dr. Weir opened the mastoid but found no pus. We also exposed the cerebrum, and two days later the cerebellum, but found no pus. The patient died of suppurative meningitis.

DR. S. D. RISLEY, of Philadelphia: It seems to me that in the differential diagnosis attention to the temperature in connection with symptoms of pressure is of great importance. In meningitis the temperature from the outset will be higher than in abscess, and the symptoms of pressure come on later.

DR. J. A. ANDREWS, of New York: In the past year I have made a number of autopsies in cases of brain abscess. Brain abscess may continue for a considerable time without any very positive symptoms, but where there is meningitis or phlebitis, there is usually a sudden rise of temperature with chills.

DR. OREN D. POMEROY, of New York: In a case of brain abscess secondary to tympanic disease the only marked symptom was a sudden rise of temperature, sometimes going up in half an hour from normal to 107°. Intelligence was unaffected until the last. The man gradually improved but died suddenly. The autopsy showed a large abscess of the brain covering the petrous portion of the temporal bone.

DR. ARTHUR MATHEWSON, of Brooklyn: It is often difficult to make a diagnosis between abscess and meningitis, and in fact many are mixed cases. In meningitis the pain is more marked than in abscess. In meningitis there is more likely to be optic neuritis, while in brain abscess I have noted a peculiar dark appearance about the retinal veins.

DR. SAMUEL THEOBALD, of Baltimore: The treatment of the preliminary stages of these cases

is important. It seems to me that a great deal might be done to prevent the occurrence of the conditions referred to. I have found benefit from local applications, especially atropia and cocaine and morphia and cocaine. If the bowels were constipated I should use a calomel cathartic. If there should be symptoms of cerebral implication I should administer mercury in some form to secure its constitutional effect.

DR. E. FRIDENBERG, of New York: During the past eighteen months I have made autopsies in two patients dead from cerebral abscess. In one case suppuration had lasted a year, but there had been no symptoms until a week before death, except irritability of temper. There was some odor, but very slight discharge from the ear. A week before death the patient developed pain in the ear, slight tenderness over the mastoid, followed by fever and symptoms of brain pressure. A small abscess was found in the temporo-sphenoidal lobe. The roof of the tympanum was carious and the meninges strongly adherent. In the second case the patient had had suppuration for years. Two months before death headache occurred, which was relieved by treatment. It recurred, with fever. There was some pain on pressure over the mastoid process. The symptoms again disappeared under treatment. Three weeks later he returned with similar symptoms. The next morning vomiting occurred, and that evening he died. An abscess containing two ounces of pus was found in the temporo-sphenoidal lobe.

DR. T. V. SUTPHEN, of Newark: These cases of brain trouble almost invariably follow the arrest of the flow of pus. We should look upon these cases as instances of local trouble and should treat the middle-ear by fomentations, and perhaps by poultice to bring about free discharge of pus.

DR. R. A. REEVE, of Toronto, Can.: In one case of death following acute suppurative otitis, there was the most profuse purulent discharge that I have ever seen, and it continued from beginning to end.

DR. B. ALEXANDER RANDALL, of Philadelphia: A case of cerebral abscess occurred in my practice last year in a boy, the subject of scrofulous disease of the elbow and other joints. I found both ears discharging, with caries of the auditory meatus on both sides. On the left all the mastoid tissues were involved. Under treatment the right side rapidly improved and on the left side there was also improvement. The case was then transferred to my surgical colleague. Six weeks later the ears were still in good condition, but the patient was gradually failing from the constitutional trouble. An hour before death there was suddenly a discharge of at least two ounces of fetid pus from the ear. There was no meningitis, but a large abscess cavity was found in the sphenoidal

temporal lobe and $\frac{1}{2}$ inch from the tympanum and connected with it by a sinus. In cases where it is thought justifiable to perform exploratory trephining of the brain an admirable and safe point is $1\frac{1}{4}$ inches behind, and an equal distance above, the upper posterior margin of the osseous meatus. This avoids the major blood-vessels, and it would be favorable to reach the cerebellum through it.

DR. E. E. HOLT, of Portland, Me., reported a case of

COMPLETE CLOSURE OF BOTH EXTERNAL AUDITORY CANALS BY BONE IN A PATIENT HAVING GOOD HEARING POWER, WITH A PREVIOUS HISTORY OF CHRONIC SUPPURATIVE OTITIS MEDIA.

T. M., age 18 years, was seen in April, 1889, for an affection of the eye. It was incidentally learned that he had had abscesses in both ears when 7 years old and the ears discharged more or less for six years, but stopped entirely five years since. Examination showed the canals of both ears of about half the usual length and occupied by a continuation of the skin of the meatus, with no appearance of the membrana tympani. There was complete closure of the canal by what appeared to be bone by all the tests employed.

The hearing power for the voice was good. The stop-watch was heard only when close to the ear; the tuning-fork was heard about ninety seconds, both by bone and aerial conduction. König's rod, of thirty thousand vibrations per second, was heard by both ears. He heard less distinctly when both ears were closed by pressure on each tragus. Shutting the mouth and closing the nostrils did not seem to affect the hearing power much, if at all. Cases of closure of one meatus with the skin of the canal continuous over the obstruction have been observed, but the hearing power is very defective. Cases in which there is a small opening between the exostosis and the walls of the meatus are not uncommon.

DR. SAMUEL THEOBALD, of Baltimore: Four or five years ago I reported a case very similar to the one described. The newly-formed membrane was, however, nearer the orifice. The hearing power was good.

DR. B. ALEXANDER RANDALL, of Philadelphia: I have had one case in which one ear was obstructed by a bony mass. There was no evidence of exostosis. The hearing was, however, defective.

DR. E. E. HOLT, of Portland, Me., reported a case of

OTITIS MEDIA CATARRHIAL ACUTA

accompanied with facial paralysis and impairment of accommodation of the eye of the affected side. Judging from statistics one would be led to believe that paralysis of the facial nerve in connection

with the acute catarrhal inflammation of the middle-ear was not a common complication. In many cases the pain having been slight and having passed off and the paralysis having come on the patient's attention is directed to this and he seeks advice for the latter affection and the cause of the paralysis is recorded "a cold," or "rheumatic."

F., aged 24, seen May 19, 1889. Seven days before he took cold and right ear began to pain that night. This pain continued three days, when it subsided, and on the fourth day he was unable to use his lips properly. Examination showed all the characteristics of facial paralysis. Testing the eyes there was found paralysis of accommodation of the right eye. This the author knew to be a fact, because he had previously had the patient under his care and recorded the test of his eyes, and also by the fact that since the improvement of the paralysis of the face the paralysis of accommodation has disappeared.

DR. S. O. RICHEY, of Washington, D. C., read a paper on

THE PHYSIOLOGY OF THE INTRA-TYMPANIC MUSCLES.

The paper was the elaboration of a suggestion made by the writer in the discussion of a paper read by him at the Congress of American Physicians and Surgeons in 1888. If the membrum tympanum in purpose protects the aural tissues lying interior to it the muscles being appendages to the membrane are designed to assist the purposes of the membrane, which they do in part by protecting it from injury by the impact upon it of sound impulses violent enough to rupture an inflexible membrane firmly attached and having such a plane as to expose it to the fullest force of the concussion. The membrum tympani fulfils one of these conditions, it is firmly attached. He quoted Toynbee and Henle as having many years ago expressed somewhat similar views as to the action of the tympanic muscles, and states that he can find no reference to this subject by later writers. The shape and other peculiarities of the auditing meatus, the elasticity and capacity for motion of the drum membrane and its oblique position with relation to the meatus; the coördination between the palatal and the intra-tympanic muscles converting the tympanic cavity into an air-cushion, all indicate a similar purpose on the part of nature to guard the membrum tympani immediately and the labyrinth mediately from violence.

EVENING SESSION.

DR. GORHAM BACON, of New York, exhibited photographs of the ear.

CYSTS OF THE AURICLE.

Of late a number of cases of so-called cysts of the auricle have been reported. Not one of these, however, seem to represent a genuine cystic tu-

mor such as is found in other parts of the body. They all were situated on the anterior surface of the pinna, and were of rapid development. They either were the results of traumatism, and contained a sanguinolent fluid, or they developed without known cause. Mild inflammatory symptoms were present in all. The development within two or three weeks in almost all cases distinguishes them clearly from the slow and non-inflammatory development of true cystic tumors. All got well either by spontaneous absorption or by incision. The speaker had seen at least half a dozen of these cyst-like sub-perichondrial swellings of the auricle. He considered them to be mild cases of perichondritis, for these mild cases of circumscribed perichondritis may, instead of getting well, remain in this condition for a time and then develop into the full picture of a diffuse perichondritis. He reported such a case.

Dr. Knapp also described a case of genuine cyst of the auricle occurring in a girl 19 years of age. The growth was double the size of a large filbert, distinctly cystic, and had developed without known cause and without any inflammatory symptoms. The cyst was removed by operation, without rupture, and was exhibited. These tumors are not frequent in the auricle, but they can not be so rare as we might infer from otological literature.

DR. W. M. H. CARMALT, of New Haven, presented a case of

EPITHELIOMA OF THE MIDDLE EAR.

The patient, a robust man aged 47 years, was first seen in June, 1888. On account of a suppurating ear (left) which had existed 42 years and had followed measles. The ear had given him no inconvenience with the exception of the discharge until a few weeks before he came under observation. He then began to have pain in and around the ear, and the discharge was exceedingly offensive. The canal was blocked by a ragged but firm excrescence, very sensitive to touch. There was slight tenderness, but no swelling or pitting over the mastoid. The pain radiated through the side of the head and interfered with sleeping. At the second visit the left side of the face was completely paralyzed. The case was regarded as one of epithelioma of the skin of the canal. The patient was seen by another gentleman, who thought the trouble might be a carious antrum. An attempt was therefore made to open the antrum, but the bone around it was so sclerosed that the cavity was practically obliterated. There was nothing of the nature of an abscess in the mastoid. The incision was then prolonged through the soft parts and into the external auditory canals. What polypoid could be reached were removed and a drainage tube inserted. The mass removed proved to be carcinomatous. In the course of a few weeks the ear

again became blocked up and the skin became involved. With the object of alleviating some of the distressing accompaniments of the condition, another attempt was made to clear it out. By chiseling away the bone posteriorly, free access to the ear cavity was obtained and the bone scraped apparently clean. No auditory apparatus was seen, simply a mass of carcinomatous tissue. The cavity was washed with a solution of resorcin and for a time the wound did well, but subsequently the disease reappeared. The discharges became again offensive and the patient exhausted, and he finally bled to death without the condition being detected, probably from erosion of the lateral sinus. No autopsy was permitted.

DR. B. ALEX. RANDALL exhibited a series of *Photographs*, and made some remarks on the use of photographs and of the lantern in teaching otology.

Dr. Randall also reported five cases of *Supernumerary Auricle*, four of the right ear, one of the left ear.

DR. T. Y. SUTPHEN, of Newark, exhibited a *Mummified Pea* which he had removed from the auditory canal, where it had lain for 19 years. The patient had been deaf in that ear since childhood. He heard the watch at one inch. After removal of the foreign body the hearing was almost normal.

DR. B. ALEX. RANDALL made some remarks upon the anatomy of the drum membrane.

DR. HUNTINGTON RICHARDS, of New York, read a paper entitled

TWO NOTEWORTHY CASES OF TRAUMATIC
RUPTURE OF THE MEMBRANE
TYMPANI.

Case 1.—Seen May 7. A woman æt. 30, two days before had received a box on the left ear. The symptoms were vertigo tinnitus and marked deafness. There had been no bleeding or other discharge. There were some evidences of pre-existing tympanic catarrh, in that it was somewhat depressed and moderately atrophic. Save for pronounced congestion of the manubrial vessels and a narrow red line along the border of the opening, it was not congested. The exposed inner wall of the tympanum was likewise pallid, secreting only sufficient mucus to give its surface a glistening appearance. The patient was directed to let the ear alone and a small, loose cotton obturator was placed in the auditory meatus.

Case 2.—A woman, æt. 23. Came under observation May 22. There was no discharge or bleeding. There was no congestion of the membrane or of the tympanic wall. The patient had complained of aural symptoms for several weeks. On May 21st she consulted a physician, who introduced a cotton-covered probe. This made her so dizzy that she had to lie down immediately and within two hours she discovered that she was very deaf.

The treatment was negative, and up to May 31st no change had occurred. The edges of the opening were then stimulated with nitrate of silver solution and a small quantity of boric acid was insufflated. Examination made a few days later showed that the opening had healed, with the exception of a small part. The patient then passed from observation.

EXECUTIVE SESSION.

Officers for ensuing year :

President, Dr. Oren D. Pomeroy, New York.

Vice-President, Dr. Gorham Bacon, New York.

Secretary and Treasurer, Dr. J. J. B. Vermeyne, New Bedford, Mass.

Members of Executive Committee of Congress of American Physicians and Surgeons, Dr. W. H. Carmalt, New Haven ; Alternate, Dr. F. B. Loring, Washington, D. C.

Committee on Membership, Drs. Arthur Mathewson, Samuel Theobald and S. D. Risley. Committee on Publication, Drs. J. J. B. Vermeyne, C. J. Blake and J. Orne Green.

A committee consisting of Drs. S. C. Ayres and Wm. W. Seeley was appointed to prepare a minute on the death of Honorary Member Dr. E. Williams, of Cincinnati.

The following were elected to membership: Drs. Harlan P. Allen, Columbus, O.; Ralph W. Seiss, Philadelphia, Pa.; David Harrower, Jr., Worcester, Mass.; Robert Barclay, St. Louis, Mo.; Neil P. Hepburn, New York, N. Y.

BOOK REVIEWS.

A TREATISE ON SURGERY ; ITS PRINCIPLES AND PRACTICE. By T. HOLMES, M.A., Cantab, Consulting Surgeon to St. George's Hospital, etc. With 428 illustrations. Fifth Edition. Edited by T. PICKERING PICK, Surgeon at St. George's Hospital, etc. Philadelphia: Lea Bros. & Co. 1889. Chicago: A. C. McClurg & Co. Pp. xxiii-1008. Price \$7.00.

The fifth edition of this well-known work, although bearing evidence of considerable emendation, represents about the same purposes as did the earlier editions: it aims to occupy an honorable place among the text-books in use in the schools, and is intended to be in a sense an introduction to Holmes' System of Surgery. The general arrangement of the work has not been disturbed, except as regards the chapter on Diseases of the Eye, which has been omitted as requiring too much of the limited space of the entire treatise were it emended so as to fairly represent the present status of ophthalmic surgery. In other respects the editor has endeavored to bring the work up to the standard of our present knowledge of

surgery without altering the general character of the work.

Among the subjects which have received the most attention in this revision, are inflammation, wounds, tumors, diseases of the bones and joints, abdominal surgery and intestinal obstruction, diseases of the breast, and operative treatment in reference to cerebral localization. It has evidently been the aim of the editor to maintain the conservatism of the older work by introducing little of anything too recent to have become in a measure classical, but one would think that a little more might have been said of recent advances made in England and in this country in the direction of the surgery of the brain, intestines, thorax, joints, etc., but little reference being made to the important advancement in these departments during the last three years: nor does it seem necessary to have retained such antiquated and ambiguous expressions as "scrofula," where tuberculosis is meant, and "caries," where definite diseases are under consideration.

The work, notwithstanding minor shortcomings, is one of the very best of that class which aims at being comprehensive in scope and concise in detail.

WOOD'S MEDICAL AND SURGICAL MONOGRAPHS. \$10 00 a year. Single copies, \$1.00. Vol. 2, No. 3, June, 1889, and Vol. 3, No. 1, July, 1889. New York: William Wood & Co., publishers.

The June number of this series is a volume of 350 pages, entirely devoted to "General Orthopedics, including Surgical Operations," by Dr. August Schreiber, Surgeon-in-Chief of the Augsburg Hospital. This is a work of great interest and is rendered particularly valuable by reason of the large number of its illustrations descriptive of deformities and deformity apparatus. The bibliographical references are extremely numerous, and much attention has evidently been given by the author to the recent works of American and English writers. The following chapter headings will serve to give an idea of the scope of the work:

- Chap. 1. General Orthopedics. Surgical Orthopedic Operations.
- Chap. 2. Rachitis.
- Chap. 3. Torticollis.
- Chap. 4. Deformities of the Spinal Column. Deformities of the Thorax.
- Chap. 5. Orthopedic Affections of the Extremities.
- Chap. 6. Contractures of the Foot.
- Chap. 7. Deformities of the Toes.
- Chap. 8. Paralytic Deformities.
- Chap. 9. Orthopedic Affections following Fractures and Luxations.
- Chap. 10. Congenital Luxations.

The July number contains the following monographs and lectures:

"Cancer and Cancerous Diseases." By Sir Spencer Wells.

"Cardiac Dyspnoea and Cardiac Asthma." By Dr. S. von Basch.

"The Influence of Menstruation and of the Pathological Condition of the Uterus on Cutaneous Diseases." By Dr. L. Grellety.

"Torsion as met with in Surgical Practice; Inflammation of Bone; Cranial and Intracranial Injuries." By T. Bryant, F.R.C.S.

"Antisepsis and its Relation to Bacteriology." By D. J. Neudorfer.

Sir S. Wells finds that cancerous diseases are increasing in proportion greater than that of the increase of population, this being as true in the United States as in Great Britain. He believes, with Virchow, that so long as cancer is a local disease, it is curable. In cancer of the uterus, where the disease is limited to the parts near the os, he prevents intra-vaginal amputation by means of galvano-cautery; where the disease has extended much higher he advises total extirpation of the organ.

Prof. von Basch compares the pathology, symptoms, diagnosis, cause and treatment of cardiac dyspnoea and cardiac asthma, and gives short reports of a number of interesting cases by way of illustration.

Dr. Grellety considers briefly the relation between uterine and cutaneous pathology, together with certain considerations regarding etiology and therapeutics.

Mr. Bryant's article is the most extensive one in the volume. It is in the form of three lectures. The principal topics considered are as follows: The causes, effects and treatment of tension as met with in surgical practice; diagnosis of tension; tension from new growths; tension the result of inflammation; effects of tension as illustrated in inflammation of bone; cranial and intracranial injuries. Reports of numerous illustrative cases are included in the monograph.

Dr. Neudorfer gives a short account of the history and present status of antisepsis with its relation to bacteriology. He also gives an excellent synopsis of the chief antiseptics used before and since the antiseptic era, including the most recent members of this group of remedies.

UNDER the will of the late Dr. Alonzo Clark, a scholarship was endowed at the College of Physicians and Surgeons, New York, for the promotion of the discovery of new facts in medical science. This scholarship has an annual income of about nine hundred dollars, and the Faculty of the College have worthily bestowed it for a term of three years upon Dr. T. Mitchell Prudden.—*Medical News*, Aug. 10, 1889.

MISCELLANY.

TENTH INTERNATIONAL MEDICAL CONGRESS AT BERLIN, 1890.—We the undersigned, do hereby give notice that, according to the resolution passed at the Washington meeting September 9, 1887, the Tenth International Medical Congress will be held in Berlin. *

The Congress will be opened on the 4th and closed on the 9th day of August, 1890.

Detailed information as to the order of the proceedings will be issued after the meeting of the delegates of the German Medical Faculties and Medical Societies at Heidelberg on the 17th of September in the current year.

Meanwhile, we should feel sincerely obliged if you would kindly make this communication known among your medical circles, and add at the same time our cordial invitation to the Congress.

VON BERGMANN,
VIRCHOW,
WALDEYER.

Berlin NW., Karlstrasse 19, July 8, 1889.

HEALTH IN MICHIGAN, JULY, 1889.—For the month of July, 1889, compared with the preceding month, the reports indicate that diarrhœa, cholera morbus, cholera infantum, dysentery and inflammation of the bowels increased in prevalence.

Compared with the preceding month, the temperature in the month of July, 1889, was higher, the absolute humidity was more, the relative humidity and the day and night ozone were less.

Compared with the average for the month of July in the three years, 1886-88, bronchitis increased and cholera infantum, cholera morbus and dysentery were less prevalent in July, 1889.

For the month of July, 1889, compared with the average of corresponding months in the three years 1886-'88, the temperature was lower, the absolute humidity was slightly less, the relative humidity was more, and the day ozone about the same, and the night ozone was less.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of July, 1889, at 26 places, scarlet fever at 30 places, typhoid fever at 18 places, and measles at 13 places.

Reports from all sources show diphtheria reported at 3 places more, scarlet fever at 7 places less, typhoid fever at 2 places more, measles at 6 places less, than in the preceding month.

LETTERS RECEIVED.

Dr. Hiram H. Barney, Philadelphia; A. Rank, Fort Dodge, Ia.; Dr. Geo. E. Frothingham, Ann Arbor, Mich.; J. A. Sexton, Chicago; Witthoff, Marsily & Co., New York; Dr. J. D. S. Davis, Birmingham, Ala.; S. A. Brewster, Creston, Ia.; Dr. F. Randall, Malden, Mass.; Dr. A. S. von Mansfelde, Ashland, Neb.; E. P. Donnell Mfg. Co., Chicago; Dr. J. V. Shoemaker, Philadelphia; Dr. J. G. McDougal, New Lexington, O.; Dr. C. J. Smith, Derby, O.; Dr. T. D. Crothers, Hartford, Conn.; Dr. E. L. Shurly, Detroit; J. H. Bates, New York; Dr. Maris Gibson, Wilkesbarre, Pa.; Mackintosh Battery and Optical Co., Chicago; Dr. S. Pozzi, Paris, France; Pappenheim's Zeitungs-Verlag, Vienna, Austria; H. Hornfeld, Berlin, Germany; The Bancroft Co., San Francisco, Cal.; Charles H. Phillips Chemical Co., Lutz & Movius, J. Walter Thompson, New York; Mrs. J. F. Hopkins, Chicago; Edward McWhord, New York; Dr. D. J. Giarth, Frugality, Pa.; Dr. Wm. McCollom, Brooklyn, N. Y.; Dr. Henry H. Smith, Philadelphia, Pa.; Ward Bros., Jacksonville, Ill.; Dr. Wm. Brodie, Detroit, Mich.; Dr. H. Cushman, Oakdale, Neb.; Dr. L. L. McArthur, Chicago; Dr. W. C. Wade, Holly, Mich.; Dr. J. Little, Bloomington, Ill.; F. A. Davis, Philadelphia; Provident Chemical Works, St.

Louis, Mo.; Dr. George E. Hubbard, W. H. Sheffelin & Co., New York; S. R. Niles, Boston, Mass.; Dr. A. B. Judson, New York; Dr. J. H. Kellogg, Battle Creek, Mich.; Northwestern University, Evanston, Ill.; Dr. Samuel Hart, Marietta, O.; Dr. John S. Marshall, Green Spring, O.; Thomas Leeming & Co., New York; Dr. R. S. Sutton, Pittsburg, Pa.; H. Soule, Ann Arbor, Mich.; Dr. J. H. Breedlove, Ft. Smith, Ark.; H. C. Lewis, Baltimore, Md.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from August 3, 1889, to August 9, 1889.

Col. Andrew K. Smith, Surgeon, is granted leave of absence for seven days, by direction of the acting Secretary of War. Par. 12, S. O. 178, A. G. O., August 3, 1889.

Major Alfred A. Woodhull, Surgeon, is granted leave of absence for two months on account of sickness, with permission to leave the Div. of the Missouri, by direction of the acting Secretary of War. Par. 5, S. O. 178, A. G. O., August 3, 1889.

Major John H. Janeway, Surgeon, is hereby granted leave of absence for two months, with permission to apply for an extension of two months. Par. 3, S. O. 52, Hdqrs. Div. of the Pacific, July 29, 1889.

By direction of the Secretary of War, Capt. John J. Cochran, Asst. Surgeon, now on duty at Ft. Adams, R. I., will report in person to the commanding General Dept. of the Platte for temporary duty with troops en route to and at the summer camp at Ft. Robinson, Neb. Upon completion of this duty will return to his proper station. Par. 10, S. O. 180, A. G. O., August 6, 1889.

Capt. Louis M. Maus, Asst. Surgeon U. S. Army (Ft. Porter, N. Y.), is hereby granted leave of absence for twenty days, on surgeon's certificate of disability. Par. 2, S. O. 173, Hdqrs. Div. of the Atlantic, August 1, 1889.

By direction of the acting Secretary of War, First Lieut. William B. Banister, Asst. Surgeon, is relieved from further duty at Ft. Wingate, N. M., and will report in person to the commanding officer, Ft. Grant, Ariz., for duty at that station, relieving Capt. Arthur H. Taylor, Asst. Surgeon, who, upon being so relieved, will proceed to Ft. Wingate, N. M., and report in person to the commanding officer thereof for duty at that post. Par. 4, S. O. 178, A. G. O., August 3, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending August 3, 1889.

Asst. Surgeon P. H. Bryant, ordered to temporary duty on ironclads, Richmond, Va.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Two Weeks Ending August 3, 1889.

Surgeon W. H. H. Hutton, when relieved at Mobile, Ala., to assume command of the Service at Baltimore, Md. July 23, 1889.

Surgeon George Purviance, when relieved at Baltimore, Md., to assume command of the Service at Philadelphia, Pa. July 24, 1889.

Surgeon J. M. Gassaway, ordered to New Orleans, La., for temporary duty. August 2, 1889.

Surgeon C. B. Goldsborough, granted leave of absence for thirty days. July 29, 1889.

Asst. Surgeon G. T. Vaughan, orders to Norfolk, Va., revoked; to proceed to Cairo, Ill., for temporary duty. August 1, 1889.

Asst. Surgeon J. F. Groenevelt, relieved from duty at Gulf Quarantine Station; ordered to Mobile, Ala., for temporary duty. August 3, 1889.

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ADDRESSES.

JOHN CLARKE, PHYSICIAN, PHILANTHROPIST, PREACHER AND PATRIOT.

An Oration delivered before the American Medical Association, June 25, 1889.

BY HON. WM. P. SHEFFIELD,
OF NEWPORT, R. I., LATE UNITED STATES SENATE.

No person however equipped for the duty, who only appreciates the undertaking, can arise to address an audience of men trained in any department of science without embarrassment.

This embarrassment is increased with the consciousness of the want of the special knowledge in which the audience before me are adepts, and by the different schools of professional life in which we have been trained.

Before me is an audience of men selected from the most eminent of the devotees of the most abstruse of physical sciences, while I have no claim to their attention, but the having from an unfortunate accident, presented a case which has attracted the notice of some very eminent persons in one of the departments of their humane profession.

The teachings of experience are that the human race are prone to violate the laws of life and health, and all of the analogies of Nature as well as of the revealed law of God indicate that penalty falls upon violated law, and that there is the necessity of a curative or healing process.

Evangelical Christianity as well as civil codes, are based upon these fundamental ideas. Here rest the foundations for the necessity of the office, and from these premises may be drawn the outline of the duties of the physician. A profession sanctioned by the example of the Savior of mankind in His healing of the sick, and making the lame to walk.

The limits prescribed to me as well as the proprieties of this occasion, forbid any further advance in this direction.

I have been asked to speak to you of John Clarke. Many who hear me will ask, Who was John Clarke? I answer, the pioneer physician of Rhode Island, the first Baptist Clergyman in

America, the author and procurer of the Charter for the State of Rhode Island which remained the fundamental law of the State until May, 1843, and up to the time of its repeal was the oldest and most liberal written constitution of government in Christendom.

John Clarke was born in Bedfordshire, England, October 8, 1609. I have not ascertained where he was educated, but it has been said that he was "a master of his native tongue and learned in the ancient languages."

The Rev. D. B. Ray, on the authority of "The Trilemma," says that "he received his baptism in Elder Stillwill's Church in London." He writes, "in the year 1637 I left my native land, and in the ninth month of the same (November), I arrived in Boston." He came while the court was in session, and after the death sentence of Mrs. Hutchinson.

On the 17th of May previous, the Massachusetts General Court had enacted a law forbidding towns and persons to receive any stranger who resorted there with intent to reside in that jurisdiction, or to allow any lot or habitation to any such, or to entertain them above three weeks, but under allowance of one of the governor's council or under the hands of two of the magistrates. For a violation of this law a heavy penalty was provided.

Unhappily, Clarke entered Boston while this law was in force, and during the pendency of a bitter controversy which had arisen out of the question whether the internal evidence of the Spirit, which was called the covenant of grace, or the works demonstrated in the lives of professors, was the better evidence of justification before God.

The Rev. John Wheelwright, who was an ardent advocate of the covenant of grace, had been tried for his heresy, and was already under sentence of banishment.

And on the 20th of November, a few day's after Mr. Clarke's arrival in Boston, many other persons, including Mr. Clarke, were given liberty to depart from that Colony, and Clarke went into banishment with Wheelwright, and they spent the winter in Exeter, New Hampshire. When Clarke came to Boston, he was 28 years of age. He was described as being a physician.

He complained of the coldness of the New Hampshire winter, and in Boston early in the following March, he joined eighteen of the victims of the covenant of grace, and crossed the Country to Providence, where he arrived within the first seven days of March, and from there went to Plymouth with William Coddington, to see about obtaining a place for a settlement, and then returned to Providence, and signed a compact for the settlement of Rhode Island on the 7th of March, and the next day with his co-settlers came to Rhode Island in Roger Williams' shallop, and on the 24th of March, with Coddington and Williams, went across the Bay to Canonocus's city, and there they procured the title to this island. Here they lived in caves until they could provide better shelters.

Among their early acts in the Spring of 1638, was to appoint a committee to lay out a site, and to provide for the erection of a meeting-house. Clarke was their preacher, as well as their physician. The men whom he accompanied to Rhode Island, had among them some who were gentle born, men of learning and of high characters.

They had no charter from the Crown, but had agreed upon a form of government based upon the Bible as their constitution, and the majority of the masters of families as its final interpreter only in civil things. They declared their form of government to be democratic, and for full liberty of conscience so long as conscience was not sought as a shield for breaking the public peace.

New men came among them who denied the validity of their government in the absence of a royal charter. Here a question arose which seriously threatened the peace of the Colony. Then Coddington, Clarke and others, early in 1639, removed to Newport, and there commenced the settlement of the town in which we are now assembled.

In the following December a church had been organized, and Clarke was its preacher.

John Clarke was now actively engaged with his co-settlers in establishing the Colony, and in preparing a concordance of the Bible.

In July, 1651, the church at Newport received a request from William Witter, an aged blind man of its faith and order, that some of the church would visit him at his residence in Lynn, in the Colony of Massachusetts. Clarke, accompanied by Obadiah Holmes and John Crandall, responded to Witter's invitation, and went to Lynn. On Sunday, while at Witter's, with Witter and his family and four or five other persons, while conversing upon religion, two constables arrested the three visitors and took them to the Lynn church and detained them until the next morning, when they were taken before a magistrate when, without evidence being adduced against them, they were convicted of having been taken by the constable at a private meeting at

Lynn upon the Lord's day exercising among themselves, to whom diverse of the town repaired and joined with them, for which Clarke was sentenced to pay £20 or to be whipped. He refused to pay the fine or to assent to its payment by others, yet the fine was secretly paid without his consent, while Holmes and Crandall both suffered the infliction of the alternative sentence, and were severely whipped.

A difficulty had arisen in the Colony, and in consequence thereof, William Coddington, who had been governor, had obtained from the ruling power in England, a commission to be governor of the Island of Rhode Island for life. The Colony up to that time had maintained a democratic form of government, and this change in its civil polity aroused the people to resist the change. The attention of the people was at once turned to Dr. Clarke, and a request signed by sixty-five, a majority of the freemen at Newport, and by 41, a majority of the freemen of Portsmouth, was presented to him to go to England and procure a revocation of Coddington's Commission, and to endeavor to secure a charter protecting the rights of the Colony. He accepted this service, and in November, 1651, with Roger Williams, who represented the Providence Colony, sailed for England, and here commenced Dr. Clarke's career as a Statesman. I use the term Statesman in its higher and better sense, for the popular mind overlooking literal meanings draws a wide distinction between the terms Statesman and politician. The latter thus is made to signify the art of obtaining votes by calculation, and by cunning and adroit methods, while the former implies the power to wisely organize, and prudently administer a government for the people. In this sense it will appear that John Clarke, though he was the contemporary of Sidney, of Cromwell, of Vane and of John Milton, was endowed with a genius of Statesmanship above, and in advance of that which any man of his time was enabled to practically apply to the government of a civil State.

In England Dr. Clarke was kindly received by the leaders in the great struggle which was then being carried on. Coddington's commission was at once suspended and ultimately revoked. Clarke remained in England, the agent of the Colony for twelve years, during which time he published his concordance of the Scriptures. (Aug. 3, 1655.)

In the calendar of Colonial State Papers, p. 427, is the following entry: "John Clarke, physician of Rhode Island, in America, having composed and very closely compacted a new concordance to the Holy Scriptures of Truth, which in regard of its plainness and fulness, and yet smallness of volume and price may prove singularly conducive to the help of those who desire to try all things in these trying times by that touch stone of truth. Henry Hill is licensed to print

and publish the same to the exclusion of all others, and the Company of Stationers are required to enter this order in their Register."

I am not aware that a single copy of this concordance has survived the wastes of the intervening centuries.

Clarke mortgaged his estates in Newport to Richard Dean, to obtain money in London to support himself while he was abroad on the business of the Colony.

His occupations during the twelve years he was the agent of the Colony in London, are largely left to inference and to the declaration of the town of Warwick, which in refusing to pay its proportion of the expenses, he incurred in rendering his great service to the Colony while in England said: "He was much employed about modeling of matters concerning the affairs of England, in which no doubt he was encouraged by men of no small estates." It is known that he was on intimate terms with, and was often the guest of Sir Henry Vane, and that he sustained friendly relations with other leading men in England in the time of the Commonwealth.

Both Massachusetts and Connecticut sought, while Dr. Clarke was the agent of the Rhode Island Colony, to obtain parts of the territory of the latter Colony to be annexed to their respective territory. Clarke, by unwearied exertion, and with remarkable address, defeated these designs. In 1662, in behalf of the Colony of Rhode Island, he presented two addresses to the Crown, asking for a Royal Charter. If Clarke's fame stood alone upon these wonderful State papers, he would have been regarded as having made one of the boldest and clearest conceptions of the rights of persons, and of the most advanced theories of civil government that up to that time had ever been announced. He closed the second of these Addresses with the following passage, which was embodied in the Charter:

"Your petitioners have it much on their hearts, (if they may be permitted) to hold forth a lively experiment, that a flourishing civil State may stand, yea, and be best maintained, and that among English spirits, with a full liberty in religious concerns, and that true piety rightly governed upon gospel principles will give the best and greatest security to true sovereignty, and will lay in the heart of men the strongest obligations to a true loyalty."

The Charter was granted by the King to the great displeasure of his counsellors of State, and new principles were thus embodied into civil government. Mind was emancipated when conscience was made free. And a people were enabled to make their own laws which by the charter might be pleaded in bar to an Act of Parliament or of the King. Laws which were not to be subjected to the risks of a royal veto. And under that charter, says Calmers, the people

of Rhode Island acted as if they were without the King's dominions. It is safe to say, that up to that time, and until after the American Revolution, no fundamental law of any State in Christendom had embodied absolute freedom in religious concerns, and so large a measure of civil liberty, as was embraced in the Charter of 1663.

On the 24th of November, with every possible demonstration of joy, the assembled freemen of the Colony adopted the Charter, and it became the fundamental law of the State, and so it remained until May, 1843.

The expressions of the gratitude of the Colony to Dr. Clarke and to the King, couched in language of extreme eulogy, were returned to them in England. While this charter was yet the fundamental law of the State, said Bancroft, the venerated historian of our country, "no where in the world has life, liberty, and property been better preserved than in Rhode Island under this royal Charter."

Graham, the Scotch historian, arraigned Dr. Clarke for the manner in which he obtained this Charter from the Crown. This attracted the attention of Mr. Bancroft, who was the first prominent writer of American history to do justice to the founders of Rhode Island, and he demonstrated that the charges of Graham rested mainly upon what occurred at Westminster between the King and John Greene and Randall Holden, who went to England after the decease of Dr. Clarke, not as the agents of the Colony, but in behalf of themselves and possibly some other settlers of the town of Warwick. In this controversy Mr. Edmund Quincy, and others in Boston, took the side of Graham, and Mr. Bancroft was ably supported by the late Professor Gammell. Mr. Bancroft has thus recorded his appreciation of Dr. John Clarke.

"Never did a young Commonwealth possess a more faithful friend than the modest and virtuous Clarke, the persevering and disinterested envoy, who during a twelve years' mission had sustained himself by his own exertions and a mortgage on his estate; whose whole life was a continued exercise of benevolence, and who at his death bequeathed all his possessions for the relief of the needy, and the education of the young. Others have sought office to advance their fortunes; he, like Roger Williams, parted with his little means for the public good. He had powerful enemies in Massachusetts, and left a name without a spot."

The Rev. John Callender, who was well acquainted with some of the men who in his time had known and been the associates of Dr. Clarke, said of him:

"He was a faithful and useful minister, courteous in all the relations of life, and an ornament to his profession, and to the several offices which he sustained. To no man is Rhode Island more in-

debted than to him. No character in New England is of purer fame than John Clarke."

The Rev. Isaac Backus, of Massachusetts, the historian of the New England Baptists, writing of Dr. Clarke, says :

"Mr. Clarke left as spotless a character as any man I know of, that ever acted in any public station in this country. The Massachusetts writers have been so watchful and careful to publish whatever they could find, which might seem to countenance the severities they used towards dissenters from their way, that I expected to find something of that nature against Mr. Clark, but I have happily been disappointed. Among all their authors or records that I have searched, I have not met with a single reflection cast upon him by anyone; which I think is very extraordinary. Few men ever merited the title of a Patriot more than he did, for he was a principal procurer of Rhode Island for sufferers and exiles. And when their rights and liberties were invaded, he crossed the ocean, and exerted all his influence, in twelve years' watchful and diligent labors for his Colony at the British Court, till he obtained a new Charter for them, of great and distinguishing privileges."

At the time of the arising of the Quaker Controversy in 1658, Rhode Island had received an official letter from the United Colonies, advising it not to entertain these people, and admonishing the Colony, "if it did receive and entertain them notwithstanding the advice of the United Colonies, that these Colonies would then see what God would move them to do to save themselves and their families from the influence of Quakerism."

This occurred while Dr. Clarke was the agent of the Colony in London. And the Colony addressed a letter to Dr. Clarke upon this subject, in which its appreciation of the doctor's services is stated as follows: "We have known not only your ability and diligence, but also your love and care to be such concerning the welfare and prosperity of this Colony since you have been entrusted with the more public affairs thereof, surpassing that no small benefit which we formerly had of your presence at home, and in all straits and incumbrances are emboldened to repair to you for your continued counsel care and help, finding that your solid Christian demeanor hath gotten no small interest in the hearts of our superiors, those worthy and noble senators with whom you have had to do in our behalf, as it hath constantly appeared in your addresses made unto them, which we have by good and comfortable proofs found having plentiful experience thereof."

This letter besought Clarke "to have an eye and ear open in case our adversaries should seek to undermine us in our privileges granted unto us, and to plead our case in such sort as we may

not be compelled to exercise any civil power over men's consciences, so long as human orders in point of civility are not corrupted and violated, which our neighbors about us do frequently practice, whereof many of us have large experience, and do judge it to be no less than absolute cruelty."

Referring to the Quakers, this letter sets out: "We have found no just cause to charge them with a breach of the civil peace. They are constantly going forth amongst them about us, and vex and trouble them in point of their religion and spiritual state, and return with many foul scars in their bodies for the same."

The situation of Dr. Clarke when in England was perplexing in the extreme, for Connecticut claimed the territory of Rhode Island on the west to Narragansett Bay, and Massachusetts and Plymouth claimed the territory of the eastern part of the Colony also to the same Bay. So as the agent of the Colony he had to contend for the existence of his constituency. Happily for him, Connecticut was for a time represented in England by Governor John Winthrop, Jr., who was like Clarke a physician of eminence, and a devoted scientist. Clarke and Winthrop met as wise and just men should always meet, and agreed upon a settlement of the Connecticut boundary, the result of which settlement Clarke prudently had inserted in the Charter, and though afterwards long contentions were had between these Colonies, in which Connecticut sought to vacate this settlement, yet the boundary fixed by Clarke and Winthrop remains the line which marks the jurisdiction of the States of Rhode Island and Connecticut to this hour.

Clarke returned to Rhode Island to receive the gratitude of its people for the priceless benefaction his genius and Statesmanship had conferred upon the Colony in June, 1664.

On his return he was at once elected a member of the General Assembly, now organized under the Charter procured by his exertions, which secured beyond any lawful interference of Crown or Parliament the civil and religious liberties of the people. And upon which a government was to be framed on principles which had no traditions in the past history of the world. Clarke entered the Assembly. The first resolution to be passed was that thereafter every session of the Assembly should be opened by the reading of the patent.

A letter of thanks was drawn up and presented by the presiding officer to Dr. Clarke, and a committee was appointed to audit his accounts. He was also made a member of a committee to revise the laws of the Colony to see that they be made to conform to the Charter, and was appointed a commissioner to run the boundary line between the Colony and the Colony of Connecticut.

The distinctive principles recognized in the foundations of the government of Rhode Island in the Charter procured by Dr. Clarke were:

1. The Indians had a title to the soil of which they could not be deprived but with their consent.

2. The right of the people who owned the soil to establish a civil government for those who should reside upon it, and to determine who should be admitted to be freemen with them.

3. The freedom of conscience from the control of the State, so long as the exercise of that freedom did not tend to the disturbance of the civil peace.

4. By the Charter it was provided that the legitimate exercise of authority conferred thereby should be a bar to any prosecution therefore, against any act or proceeding of the King or of Parliament.

The credit of the discovery of these principles in government Dr. Clarke shares with others, but the incorporation of the principles of civil and religious liberty into the Charter, and the protection of Chartered rights against the invasion of King and Parliament, by anticipating and applying to this quasi-corporation the principles long after settled in the Dartmouth College case, was the work of Dr. Clarke.

To properly appreciate the merit of these provisions we should place ourselves in the situation in which Dr. Clarke was placed, and surround ourselves by the state of governmental science, as it was at the time of the return of Charles II to the throne, and the granting of this Charter, and then look forward through the intervening time, and watch the expansion of these principles in government as they, like the dawn of the coming day, have been spreading over the world. Then we reflect that principles are stronger than men; men die, but principles live forever. The principles incorporated into the Charter of Rhode Island are yet expanding and ameliorating the conditions of mankind, and will continue their work until they overthrow thrones and every where break down dynasties and hereditary privileges to govern. And the dissemination of education and morality among the masses of the people after the manner proposed by Dr. Clarke, and for which he by his will gave his private fortune, will fit the people to rise above the scrambling hoard of political pirates who now, like hungry dogs after prey, strive to obtain places which should be places of honor and trust, with as little scruple or regard to consequences as the privateersman disposes of his plunder and prize money.

Dr. Clarke was thrice married, but died childless, April 20, 1676, and was buried in what was the south-east corner of his orchard, near his dwelling, and his church on the northerly side of what is now West Broadway, in Newport.

DR. SEGUIN, of New York, has been presented to the Paris Academy of Medicine as corresponding member.

MARKING AN ERA IN LARYNGOLOGY.

The Address of the Chairman of the Section of Laryngology and Otology, delivered at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY WILLIAM H. DALY, M.D.,
OF PITTSBURGH, PA.

Gentlemen and Colleagues:—Let us congratulate ourselves that, at last, we, as laryngologists and otologists, are in position to mark an era in the progressive history of the American Medical Association—an era of good, solid medical sense. I refer to this, the first meeting of the Section of Laryngology and Otology, as a separate and individual body disassociated from the Section of Ophthalmology, in which the two former closely related specialties have thus far in our history played a secondary rôle.

As laryngologists and otologists we have long agreed that, to be an able practitioner in either specialty, one must be a well informed and competent practitioner in both these special branches of medicine; but so far as ophthalmology is concerned, if we except certain catarrhal ophthalmias of a chronic character, there is little call for the constant special skill and daily practice of the laryngologist in the ordinary treatment of the eye. But in the interest of otology, we, as laryngologists, feel a pride that grows with experience (especially those of us who have given more than the usual attention to intra-nasal diseases), that we made no mistake in our formulated opinion expressed eight years ago, at the International Medical Congress at Copenhagen, viz.: That the laryngologist of the future must be more the rhinologist, and the rhinologist more the surgeon than the physician. For this formulated prognostic expression of opinion, the author was assailed by some excellent men and friends in our specialty, as giving a blow to laryngology; but when such able minds as Profs. Bosworth and Jarvis of New York, Roe of Rochester, Woakes of London, and others, endorsed the author's views in their daily practice, and publicly in their writings and discussions, and a host of others, such as Profs. Harrison, Allen, Sajous, etc., endorsed them by adopting them in their daily practice, it was enough that I had voiced a prediction that was being and has been entirely verified by experience.

But as to the practical application of these views, they come to us with a redoubled force and utility in by far the largest number of the inflammatory diseases of the middle ear; hence I desire to refer to them, and to this end I ask the question, "How shall we attack a chronic otitis media successfully?" How can we do it without the necessary skill of the laryngologist and rhinologist? The largest number of these cases have begun *not* in the ear, but in the naso-pharynx, and we all know are only arrested (alas! we say *arrested* advisedly) by the rational treatment.

Applied through skill in treating these intra-nasal parts, because too often the original or central disease has been neglected so long, or ignored, that the patient has suffered a permanent and irremediable damage to the middle ear, before the cause of the disability is suspected. However, no informed otologist will think of questioning the assertion that the rhinologist, and the surgical one at that, is the man who will oftenest help him out of his difficulty in all the cases of inflammations of the inner and middle ear.

Now, gentlemen, as we have for the first time in our history come together as laryngologists and otologists, the two (to us, at least) most enticing fields of medicine, where there is probably the largest possible future for good to humanity, in solid, useful and brilliant work, and hence more distinction to ourselves than even the most sanguine suspect, as you see by our programme, we have a long list of papers from able authors, about forty-eight in all, and we must strictly adhere to our rules limiting discussion; and since you have made these rules and I, as your President, simply enforce them, I trust you will aid me with the same courtesy you have always shown me, both personally and publicly, while seeking to perform the not always easy task of a presiding officer.

AN ABSTRACT OF THE PRESIDENT'S ADDRESS.

Delivered at the Fifty-Seventh Annual Meeting of the British Medical Association, Aug. 13, 1889.

BY CLAUDIUS G. WHEELHOUSE, F.R.C.S.,
CONSULTING SURGEON TO THE LEEDS GENERAL INFIRMARY.

A CURSORY REVIEW OF THE PROGRESS OF MEDICINE AND OF MEDICAL EDUCATION.

Life, as measured by the standard of the space of time allotted to each unit of the human family, is but a little span. Man has not reached his present condition of intellectual, of moral, or even of physical greatness in one generation; the white cliffs of Albion, in their formation, mark not only generations, but æons in the progress of creation. Rome was not built in a day! So medicine, as she stands to-day, strong by the acquirements of her children of many generations, did not arise upon the world in the full glory of a heaven-born science; but, sifting grain by grain of her faith from the speculations laid at her feet by her followers through countless ages, has, little by little, built up the temple of her fame until it has assumed the proportions in which we now behold it, and of which we are the accredited custodians.

THE MEDICINE OF THE EARLY AGES.

Sometimes in the current of events her progress has been labored and slow; with halting and uncertain steps, with Arabian mythologists, as-

trologers, and such like visionaries as her companions, she has picked her way through gloomy times of mystery, uncertainty, and doubt. At times the light of truth has shone upon her path more brightly and has cheered her on her way; and with the Harveys, the Sydenhams, the Jenners, and the Hunters, the Dupuytren, Laennec, and Pasteurs of the world for her companions she has walked with firmer steps until at last she has become an acknowledged power, and stands forth as the companion of even the exact sciences. Each generation of her votaries as it passes across the stage of the world's history, is henceforward bound to leave a mark behind it as its contribution to the sum of existence, and that mark must, in the aggregate, be the result of individual efforts.

To some it is given to do great things, and to stand revealed by the unmistakable stamp of genius. To some, by more prolonged and patient effort, to leave an impress which, if it be not so brilliant, is yet equally fruitful and enduring. And to every one of us, however humble may be the current of his life, it is permitted to make his mark, to add his little contribution to the total sum of a ceaseless progress, and to advance it or to hinder its advance.

I can look upon the broad roll of this great Association and can see there names that will never die—the names of men whose achievements will never perish, who when they sink as their predecessors have done to their rest will leave, as Harvey and Jenner left in former times, a priceless inheritance to mankind at large, whose labors will not have been in vain, and of whom the world will acknowledge that the talent entrusted to them has been productive of abundant fruit, that of a truth they have left the world better and richer than they found it.

I can see hundreds of others who are aiming at this high standard, who by their individual labors are raising the great tower of knowledge, and whose lives, though not illumined by the torch of genius, will yet leave behind them the undying results of patient labor in well-doing; and I see, in all, the roll of a great brotherhood, strong in their efforts to advance the common weal, and doubly strong in the strength of union.

To us, as medical men, all science is of transcendent interest; but, not unnaturally, the sciences which bear on life and death stand, for us, in the forefront; and to each generation as we pass across the stage of existence, it becomes imperative to seek to add something to the store of that knowledge by which life is rendered more endurable, is robbed of some of its attendant evils, some of its sorrows and some of its sufferings.

Our fathers, under disadvantages we are scarcely able to appreciate, did great things. Are we better than our fathers were?

Will you quarrel with me, if, in welcoming you to this our great annual festival, I ask you, for a few brief moments, to ponder over this important question with me?

Life, and with life the progress of science, has ever been chequered with sunshine and shadow. Evil and bright days must follow each other; good times and bad must balance one another, and if, in the great battle for existence, we incline sometimes to lay down our arms and to capitulate, we have the authority of one of the sweetest of sweet singers to revive our fainting courage:

Be still, sad heart, and cease repining,
Behind the clouds is the Sun still shining;
Thy fate is the common fate of all,
Into each life some rain must fall;
Some days must be dark and dreary;

and the lives into which, on the other hand, some bursts of sunshine of even more than usual brilliancy do not occasionally force their way are, I would fain hope, very few. . . .

The bill of fare we have provided for your enjoyment will meet, we hope, with your appreciation and approval; and if we have ventured upon the introduction of some few novelties and variations in the usual plan of the annual programme, we have done it in the sincerest hope that we may thereby advance and increase the interest of your sojourn among us.

My duty is an easy and a pleasant one. I am precluded from speaking to you on any of the directly special subjects with which we are called upon, whether as physicians or as surgeons to deal.

Medicine will be discussed, and all that can be said of it will be brought before you by one of the leading physicians of the day; and in Dr. J. Hughlings Jackson will find an exponent to whom you will join me in listening with hearty interest and attention.

Surgery, and the progress it has made and is making, will be dealt with by my friend and colleague Mr. T. Pridgin Teale, and for, I believe, the first time in the history of the Association, an address in Psychological Science will be offered you, and this we have placed in the very able hands of our former tried and ever welcome friend Sir James Crichton Browne.

Our Sections will be presided over by men, who, each in his own department, will tell us all that it is necessary for us to know to keep us abreast with its latest and highest developments, and, as individuals, you will have an opportunity, in the discussions which have been arranged for you, to bring forward any special matters with which you wish to deal, on which you may personally wish to be heard, or to impart to us any information which you have acquired or have worked out. To do this has ever been, and is still, the great object of our Association; and

who can calculate the advantage that has accrued to us, as a profession, from the accumulated labor of the fifty-seven years during which it has existed?

Union is strength, and that which men by individual labor never could have accomplished the principle of association has enabled us to do; and by yearly repeated meetings such as this upon which we are entering—with the aid of a journal by which the labors of each one may be made the common property of all—a fund of wealth which must otherwise have died with individuals has been preserved to us for ever.

Of what comparative general value were the labors of individuals in the early days of the present century in comparison with what they are now?

However brilliant the work that was done, or however intrinsically valuable, what opportunities were there of its being made known beyond the limited area of the worker himself; and how much excellent work must have been lost to the world in consequence?

THE COMPARATIVE ISOLATION OF PRACTITIONERS IN FORMER TIMES.

We, in comparison with preceding generations, have been possessed of advantages of incomparable magnitude. Not only in our own, but in every other science also, knowledge and the facilities for the spread of knowledge have so increased that comparison is almost impossible. Think for a moment of the changes that one generation only has seen! The facilities for personal communication that have come with the advent of railways, of steam, and, above all, of the developments of electrical science, by which not individual portions of our own kingdom only, but all the nations of the earth have been brought into inter-communication. What great discovery can now be made that does not instantly become the property of even the remotest nations of the world, and is not, by any omnipresent press, brought to the personal knowledge of every votary of science?

Does America give birth to anæsthesia? And in what part of the world does the blessing of painless surgery remain unknown? Does Sir Joseph Lister satisfy his own mind of the infinite powers of antiseptic surgery, and in how short a period of time is his brilliant discovery the common property of every surgeon in the world?

What did the surgeon of fifty years ago know of the powers of "germs," of "bacteria," of "baccilli," and of their capability to destroy his most elaborate and perfect work? And where is the student of surgery of the present day to whom they are unknown, or who is unprepared to do battle with them, one and all, and to baffle or to modify their evil influences? What the medicine and surgery of the 18th and preceding centuries

were, we are only able to conjecture. Its medicine we believe to have been little more than an empiricism founded on close observation, and led by a few master minds, and its surgery we know was crude, and, as compared with that of to-day, was even barbarous and cruel, and few of us I imagine would care to witness a major operation, as then performed, by even the most renowned and skilful surgeon.

But the light, even then, was breaking, and not many years of the present century were to run ere truer principles of both medicine and surgery were to be made known to the world, and each was, as a science, to be established on a surer foundation than any on which it had hitherto rested.

THE GENERAL PRACTITIONER OF THE EARLY PART OF THE PRESENT CENTURY.

Let me endeavor to draw a sketch of the average practitioner of the commencement of the present century, and there may be some, at any rate, in this room who can follow me and judge whether I paint him correctly, or whether, trusting too much to tradition and report, I do him injustice.

He was usually a hard-working industrious man, who thought little of bodily exertion, and who spent the greater part of his time in his saddle, which was his only way of getting about the country; a hard-thinking man, but one whose mental training had not been great, nor his education elaborate; whose opportunities for the acquisition of professional knowledge had been few and short; of whom it might be said that that which he knew was, in the main, either the fruit of his own observation, or of his own observation added to the traditions of the place or practice in which he had been brought up.

Knowledge and practice alike were purely empirical with him, and though he could treat disease with skill, and could, in most cases, give a good account of his warfare, it was purely by empirical means that he did it. His great panacea for all ailments was blood-letting, and his pocket was never unarmed with the all-potent lancet.

As a Physician.—No matter what the case might be, so long as it was "acute," venesection must precede everything else; then followed a superabundance of mixtures, powders, draughts, pills, lotions, etc., with which he hoped to effect a double purpose, first, to cure his patient, and, secondly, to remunerate himself for his attendance; for, so trifling were the charges he was able to make for his personal labor, and at so low a rate was that estimated by his patients, in comparison with the amount of medicine he gave them, that, except for the additional charges made for it, his remuneration would have been infinitesimal. He had a good sound knowledge

of drugs in general, and of what they could do; he was sadly too ready to rely on them, and his patients were compelled not only to swallow most nauseous compounds, but too swallow them also in inordinate quantities. Of the morbid anatomy of diseases he knew something, but not much; of pathology, in its true sense, he knew nothing, for physiology, whether healthy or morbid, was not one of the sciences of his day. When he "walked the hospitals" for the few months required of him, he saw a few post-mortem examinations, and had the opportunity to mark the ravages and the appearances left by various so-called diseases, and these he was apt to regard as the diseases themselves. His treatment was chiefly based on nomenclature; he could tell you what was good for "fever," what for "tic," for "rheumatism," for "indigestion," for "scurvy," and for innumerable other complaints; and he who was believed to possess the greatest number of formulæ for the greatest number of complaints was regarded as the cleverest and most desirable doctor.

As a Surgeon.—As a surgeon he was, as a rule, further behind the practitioner of to-day than he was as a physician. His education, such as it was, had taught him to rely, in this branch, more on the skill of others than on his own. There were certain men, well known in their several districts, as the men to whom to appeal in cases of surgical emergency, and they were the men who made world-wide reputations. . . .

SURGICAL OPERATIONS IN FORMER TIMES.

A surgical operation in those days was an ordeal of fearfully different magnitude to anything known to us to-day, and, naturally enough, the patient had a large say in the matter. Confidence in operations themselves and confidence in the skill of the operator were not then what they are now, and it must be remembered that when, as the only means of escape with life, an operation had to be performed, it had also to be endured in all its unalleviated agony. Courage and endurance, unfortunately are not given alike to all, and many a life which would be saved to-day was at that time voluntarily laid down, not simply for want of faith in the capability of the surgeon, but from sheer inability to face the terrible ordeal of bodily suffering involved. . . .

THE MEDICAL SCIENCE OF THE PRESENT DAY.

That the medical science of our time is in advance of that of the time of which I have been speaking is beyond question, and that the effects produced by increased knowledge and research have given advantages to the world of indescribable value no one will deny. Look where you will, whether over the domain of medicine or of surgery, and the facts are indisputable. The field is enlarged, the culture of the field is im-

proved, and the harvest is, beyond all question, infinitely greater, and it is surely worth our while on an occasion such as this, to ascertain, if we can, wherein lies the secret of our advance.

In a large measure it is due to our possession of vastly improved instruments of precision.

To our ancestors the revelations the microscope has made to us were but a dream. They could theorize, and argue and believe, but the things upon which they could only theorize, and argue and believe, are living verities to us. To them the existence of a *materies morbi* was only an argument, whereas now, we know not only that the causes of many diseases are indeed material, and even tangible, but that we are able to demonstrate and see them, to recognize their individuality, their specific forms, and the phenomena of their growth, propagation, and development.

I call to mind a story of two great Scotch professors—the one a theorist, the other a materialist. The materialist would argue that certain forms of disease must be due to the presence of germs, and were the direct results of their development, propagation, and multiplication; and the theorist would cry “here is your microscope, show me but one of these germs and I will believe; but, until you do, I cannot;” and, being unable to do this, his friend could only fold his hands and wait patiently, hugging his belief, meanwhile, but with the conviction of certainty none the less.

Gentlemen, picture these two professors now, if they could meet, and know only as much as we know of bacteria and bacteriology, and of the field of germ pathology. And meanwhile, yet another Scotch pathologist as fully convinced as though he could see or had seen the whole range of modern pathological development, so ponders the theory, and acts upon what he believes its possibilities to be, that, at last, he lays at the feet of his profession the whole science of antiseptic surgery. So, in like manner, and little by little, the microscope has revealed to us many of those hidden mysteries which constitute the whole science of physiology, has shown to us the beauties of capillary and lymphatic circulation, has enabled us to understand and comprehend the processes of absorption, of disintegration, and of recuperation, and has placed at our disposal the key to mysteries of which our predecessors could have but faint imaginings, but which we know, and know with a certainty which constitutes our knowledge science indeed.

Thus medicine and surgery have alike been founded on a rock of knowledge, from which they can never henceforward be dislodged, and from which in their future progress light may be made to shine, which will illumine their path along whatever roads they may advance, and will dispel many a doubt and darkness which, in former times, would have been insuperable barriers to their progress. And so, by other in-

struments of precision, barrier after barrier has been removed from our path, doubt after doubt has been cleared away, and we now see clearly where heretofore we had only seen as “in a glass darkly” and unassailable stores of knowledge have thus been placed at our disposal. What shall I say, for instance, of our advance along the pathway opened up to us by electrical science? Is not this alone one which, uncomprehended in former times, has enabled us to build up knowledge of phenomena, without which the infinite intricacies of the action of the nervous system must have remained shrouded in profound darkness, and out of the chaos of former mysteries to see, clearly defined, order and law where ignorance, hypothesis, and mystification formerly had reigned supreme. And while physiology has thus grown into a true science, pathology has also advanced with equally rapid and giant strides. We see, indeed, as our ancestors did, the ravages made and left behind in the track of disease, but we see them only as the evidences of deeper physiological mysteries; we study them as the effects of processes which have constituted the true phenomena of disease, and we seek to unravel them one by one until we see clearly how they have arisen, and what they denote. And so, with ceaseless patience, we endeavor to track down mischief to its origin and birth. Year after year our patience is rewarded by fresh discoveries, fact is added to fact, uncertainty after uncertainty is dispelled, and thus, each year, the tree of knowledge puts forth fresh shoots and brings us a more and more abundant yield of goodly fruit.

Advances, however, of such kinds as these, and in such directions, do not, in my opinion, constitute the chief or highest glory of modern medicine.

PUBLIC MEDICINE.

A common reproach is often brought against both medicine and its practitioners that it is a sceptical profession; that its practitioners are essentially materialists in their views; that medicine, as a science, leads to free thinking, and seeks, in a rational explanation of every fact with which it is brought into contact, to undermine our belief in things spiritual, and to lessen our faith in all that we cannot see, and handle, and account for; that constant contact with pain and suffering tends to numb our sympathy and to diminish our pity for the sufferings of mankind.

On this point I would venture fearlessly to challenge any other calling or profession to produce a parallel to the modern development of “Public Medicine,” a science which seeks ever, even at the risk of its own extinction, to exterminate the causes of disease and death, and to eradicate from the world the very springs and sources from which they arise.

“It is a Commonwealth sustained and gov-

erned by the desire existing in the minds of each of its members to do as much good as possible to every other member." It looks upon prevention as better than cure, and asserts, as is now clear to all, "that a large part of human suffering is preventable by improved social arrangements," and sets itself to the task of sweeping away all such preventable causes.

"Its compassion is all the deeper, its relief more prompt and zealous, because it does not generally, as former generations did, recognize such calamities to be part of man's inevitable destiny; and it hurries with the more painful eagerness to remedy evils which it feels ought never to have befallen."

"When the sick man has been visited, and everything done which skill and assiduity can do to cure him, modern charity goes on to consider the causes of his malady; what noxious influences besetting his life, what contempt of the laws of health, in his diet or habits, may have caused his sickness, and then to inquire whether others incur the same dangers, and may be warned in time."

"Our Great Example commanded His first followers to heal the sick and give alms, but He commands us and all His followers in this age to investigate the causes of all evils, to master the science of health, to consider the question of education with a view to health, and while all these investigations are made with free expenditure of energy and time and means, to work out the re-arrangement of human life in accordance with the results they give; and if, instead of undoing a little harm, and comforting a few unfortunates, we have the means of averting countless misfortunes, and raising by the right employment of our knowledge and power of contrivance, the general standard of happiness, we lessen the necessary evils of life, lengthen the term of human existence, wipe out the causes of innumerable griefs and sufferings, make life more endurable and happy, can it be said that we are failing to obey the commands or to undermine the teaching of our great Master."

Can it be denied that these are among the chief aims and objects of our profession in this our day? Is not every community provided with its officer of health? Is not disease of every kind assiduously and ceaselessly tracked to its hidden birth-place? Can an epidemic now run riot as it did in former times? or devastate a whole country, as it formerly was wont to do? Look at the great scourges of the earth as described in history—at malarial fevers, at small-pox, at typhus, at cholera, at the whole host of epidemic diseases which, born of and fostered by insanitary conditions revelled in the unprotected homes of this and other countries, and sapped the health and strength of nations.

Are we not adding year by year to the vast stores of our knowledge? Are we not, by our ceaseless search after the seeds of disease, the bacilli, the micrococci, and the germs of which it comes, and by our cultivation of sanitary science, doing a mighty work in the renovation of the world and the diminution of suffering and pain? Can any work be nobler? any search after truth be more innately religious?

Thus at least I argue when I hear our profession charged with irreligion, and thank God for that spirit of ceaseless inquiry which impels us to seek truth and truth only, and, when we have found it, to hold it with a grasp whose tenacity cannot be broken.

So then in our daily life as the servants of our suffering fellow creatures, in our eager race after improvements, in our efforts to spread abroad over the earth the results of the knowledge we attain, I hold that the practitioners of medicine of the now closing nineteenth century have not been left behind in the race of life; that we have won our laurels, and have been faithful to our trust. And as we exult in the progress we have made, and are humbly thankful, so let us hope will those who follow after us, outshine our accomplishments and leave us in turn very far behind them in knowledge and in power for good. . . .

I have endeavored to recall to your memory the character, the achievements, and the capability of the practitioner of former times. I have shown you how infinitely greater is the knowledge and the utility of the practitioner of the present day. We know how he has brought every region of the body, even those which were formerly deemed wholly beyond the sphere of his influence, such as the contents of the cranium, the vital organs of the chest, of the abdomen, and of the pelvis, under the dominion of our science; that by the institution of preventive medicine, he has swept away many of the opprobria, and of the direst scourges of former times; and it only remains to indicate in very few words the still vast field of further utility that lies open for cultivation by the practitioners of the future. There is one plague spot, I fear, which even he will fail to conquer; which will remain to fester, to kill its thousands, to maim, disfigure, and to sap the health of millions, of deserving and of undeserving alike, and, as the great curse of humanity, to baffle all our efforts to arrest the progress of disease, and to render them futile and abortive. You know the curse to which I allude; the curse that steadily and vindictively pursues the track of licentiousness, of ungoverned passion, of hateful sensuality; and you will admit with me that so long as human nature remains what it is, and is left in unbridled possession of the means of gratification, no ray of either light or hope will fall on that dark track.

¹ Ecce Homo, chap. xvii, "The Law of Philanthropy."

Some day men may have become sufficiently enlightened to submit to necessary legislation and restrictions on this, and cognate subjects; but, until they do, the foul stream of syphilis will continue to meander, hither and thither, and whithersoever it will through the world of life; will poison its springs, will wither even its fairest blooms, and destroy its richest fruits without selection and without mercy.

By the cultivation of bacteriology and cognate sciences, by a deeper and more profound acquaintance with natural phenomena and laws, I can foreshadow in my mind the time when the whole range of zymotic and exanthematous diseases will have been subdued and conquered; when the seeds of each will have been isolated, and so studied that their individuality will be recognizable; the soils in which they will grow, and those in which they will lie sterile will be known and appreciated, and be brought under cultivation by the hands of the medical men of the day; when the methods of dealing with them will be such that they may be reduced to harmless quantities; and when, by the spread of sanitary science, the whole human race may be protected from their evil influences.

It will not be in our day that these mighty triumphs will be won, but our successors will undoubtedly achieve them; and the time will certainly come when the kingdom of disease will be so closely narrowed down that only the necessary accompaniments of the changes and vicissitudes of natural laws, the evils attendant upon the wilful disobedience of those laws, the innumerable accidents to which life and limb must be for ever liable, and the inherent defects and deficiencies in the harmonious working of the parts of a machine so exquisitely and delicately constructed as is the frail body which, for a time, we inhabit will be the only kingdom in which the professors of medicine and surgery will be called upon to exercise their sway. Then will the victory of our science be complete, and the day will have come when the world will be called upon to acknowledge that the labors of the physician and surgeon, patient, enduring, untiring, as they have been through all time, have not been in vain, and have reached their final consummation.

DR. JAMES L. CABELL, Professor of Anatomy and Surgery in the University of Virginia, died at Overton, Va., on the 13th, aged 76. He was graduated in medicine at the University of Maryland, in 1834. During the war he had charge of the Confederate military hospital in Charlottesville. He was Chairman of the National Sanitary Conference at Washington during the yellow fever epidemic at Memphis, and subsequently was President of the National Board of Health.

ORIGINAL ARTICLES.

INTERNATIONAL COMITY IN STATE MEDICINE.

Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June 25, 1889.

BY JOHN B. HAMILTON, M.D., LL.D.,

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Mr. President:—The last quarantine convention held in this country was held in Montgomery, Ala., March 5, 6, and 7, 1889, pursuant to a resolution of the Alabama Legislature. The conference was largely attended, and although called for the purpose of considering quarantine alone, the meeting resulted in the formulation of some well known principles of sanitation, but which, not having been codified, were, nevertheless, in a somewhat nebulous state. Among other propositions the conference agreed to the following, which I here recite as the text of this paper:

"Resolved, That this conference is of opinion that it is a duty devolving on all Nations to take measures to eradicate any plague centre from their territory, and that the existence of such plague centres is a menace to all other Nations, and that our State Department be requested to take measures through proper diplomatic channels for the conveyance of this opinion to the Governments deemed obnoxious to the opinion as herein expressed."

The medical part of International law is a recent creation. The International sanitary conferences that have been held in Paris, Constantinople, Vienna, Washington, and Rome, have successively been the arenas where these questions have been discussed, and so far there has been little result, if we except the International quarantine maintained at the Suez Canal by the French, and the Consular system of notification inaugurated by the United States. At these conferences, with all the conservatism underlying the action of diplomatic representatives, the views of the technical delegates, while not always fully adopted, have not seemed too radical, and the mere fact of the calling together of these conferences, is itself proof that Nations are now acting in formal recognition of the necessity of a new chapter in the International Sanitary Code.

I speak of the "International law," although it is well known that "there is no legislative or judicial authority, recognized by all Nations, which determines the law that regulates the reciprocal relations of States." (Wheaton.) But there are interpretations of the *jus gentium* which, by common acceptance and long usage, have been the guiding principles on which diplomatic disputes have been settled for many years.

Without entering upon the question of whether it is strictly correct to use the term *law* as applicable to mere rules governing the conduct of independent Nations with one another, we may at least admit that there are certain moral obliga-

tions resulting from natural rights, which Nations at peace respect and observe. Mr. Madison defines International law as "consisting of those rules of conduct which reason deduces as consonant to justice, from the nature of the society existing among independent Nations, with such definitions and modifications as may be established by general consent." (Wheaton.)

"To this favor, then, we come at last" in discussing this question, that whatever is done or admitted, is by general consent. Most of the terms of the International law have been settled by treaty.

One of the *absolute* rights of independent States resting upon general consent and common usage, and acknowledged as the most important, is the right of self-preservation. "This right," says Wheaton, "necessarily involves all other incidental rights, which are essential as means to give effect to the principal end." It follows logically, that preservation from epidemics falls within the rule, and a Nation should have a right to view as equal acts of hostility the sending out of a piratical craft, or of a ship infected with yellow fever, cholera or other contagious disease. That division of commerce known as the carrying trade, is too impatient of sanitary restraint, it should be stripped of its power to convey disease, and by International treaties the carrying trade may be so regulated. There need be no interference with shipping. Modern machinery of disinfection has taken the place of "detention." But even this regulation will not go to the root of the evil, for the existence of a plague centre in any country is a constant menace, and the carrying of fomites may sometimes escape the utmost vigilance.

Therefore it seems that the *jus gentium* requires that any Nation, having within its territory an agency capable of destroying or injuring another, suppress that agency. This is not a strained interpretation, for we may find the general principles recognized in the restrictions placed upon a neutral. A neutral must restrain from fitting out, or sailing of armed cruisers of belligerents, and must prevent their territory from being made the base of belligerent operations; not only that, but a reasonable vigilance must be exercised. (Wharton, International Law Digest.) And further it was claimed, and the claim has been admitted, that it is the duty of the sovereign of any country to restrain agencies likely to injure another country, such as by predatory Indians or other marauders, or mob injuries. (Wharton, loc. cit.) The diversion or obstruction of navigable waters without the consent of the injured Nation, has also been successfully claimed as a violation of International rights. Why then should not the claim be insisted upon, that under the absolute right of self-preservation, we shall demand of certain other countries that reasonable diligence in suppressing small-pox, yellow fever and chol-

era be displayed by those Nations owning disease-breeding foyers.

There has been a great increase in the comity between Nations in regard to sanitary matters in the past few years. The first step is clearly that inaugurated by the Vienna Conference of 1874, where the danger of cholera importation having been recognized, by general consent, the French Government took charge of the quarantine service at the southern entrance to the Suez Canal, since which time cholera has not passed beyond Egypt. It is true that cholera appeared in Europe in 1883, but it came by a different route, *i. e.*, by French troop-ships from Tonkin, and the disease was thence disseminated to Spain, Italy, Sicily, Sardinia and South America.

The next important step in International sanitation, I am glad to say, was taken by our own country. Dr. John C. Peters, of New York, in a letter written to the late Surgeon-General Woodworth shortly after a visit to Havana, wrote that "an international public sentiment should be created against the filthy and careless ways of the authorities, which cause so much suffering and death among the mercantile and public navies of the whole world." (Woodworth on Quarantine, Transactions International Medical Congress of Philadelphia, 1876, p. 1068.) That officer (Jno. M. Woodworth) in a report to Congress in 1874, had invited attention of Congress to the necessity for "prompt and authoritative information to threatened ports of the United States of the shipment of passengers or goods from a cholera infected district," and he suggested that the Consular officers of the United States should be instructed to place themselves in communication with the health authorities of their respective localities, and to advise promptly, by cable, of the outbreak of cholera, and the sailing and destination of any vessels carrying passengers and goods from infected districts. This suggestion, so eminently practical, was finally adopted by Congress in the law of April 29, 1878, which now forms the basis of our existing Consular sanitary regulations. Through the kindness of the Honorable the Secretary of State, and the courtesy of the efficient chief of the Consular Bureau, I was permitted to recast the last revision of the sanitary portion of the Consular regulations (1888), and I am of opinion that our regulations on this subject are at present in advance of those of any other country. The *Bureau Consultatif d'Hygiene*, of Paris, in its last report, invited the attention of the Minister of Foreign Affairs to these regulations, and recommended that the French Consuls receive similar instructions. Our government has gone much further in this direction. We have employed a competent inspector in Havana since 1879, who is attached to the Consulate as medical adviser, and who makes personal inspection of the shipping bound to the United States, and who

attends to the sanitary welfare of American vessels in that port. When the cholera became epidemic in Europe in 1883, by my recommendation, a medical inspector was attached to the Consulates at Liverpool, London, Havre, Bremen, Hamburg, Marseilles and Naples, who, under instructions from the Bureau, made careful inspections of emigrants, baggage and merchandise bound to the United States. No government has yet protested against these inspections except Spain, which country took exception to the continued presence of the United States Inspector in Havana, but that powerful country withdrew the objection when it was pointed out that, without such preliminary inspection, under municipal regulations of our ports, the carrying fleet would be greatly delayed, and at some ports shut out altogether during the summer months.

Our National quarantine laws are now much more rigid than heretofore, and year by year the stations are becoming more completely equipped, but much trouble would be saved, and danger avoided, by enforcing the international rule now asked, as a right.

What excuse can exist for apathy in countries where yellow fever and cholera are respectively epidemic? It is not a friendly act for a Nation having a contagion-breeding centre, to fail in the exercise of such vigilance as might prevent the emanation of the disease germs.

I again quote Woodworth (*loc. cit.*). "The endemic homes of cholera and yellow fever are the fields which give the greatest promise of satisfactory results to well directed and energetic sanitary measures, and to this end an international sentiment should be awakened, so strong as to compel the careless and offending people to employ rational means of prevention."

In the volume by Dr. E. C. Wendt, of New York, on "Asiatic Cholera," New York, 1885, I wrote concerning this subject: "A National Government . . . during its existence as a Government, must assume certain responsibilities, among which are those affecting the physical and pecuniary welfare of the people. A Government must, under the natural limitations of human rights, take proper and necessary measures to protect its subjects against pestilence or famine by such wise and prudent acts as the necessities of the time may seem to warrant. A failure so to do would subject such a Government in the eyes of all civilized peoples to just condemnation, and as the safety of Nations makes them mutually inter-dependent, whether they will it or not, so the safety of a particular Nation is dependent upon the physical integrity of its several municipalities, as well as upon the physical integrity of its neighbors. . . . Modern Nations have tacitly recognized these responsibilities, and endeavored to meet them by 'international conferences,' rarely, however, with any

view to mutual concession. At each 'conference' thus far held, the commercial phase of the question has, although purposely kept in the background, seemed to be paramount, and although there has been substantial agreement, first as to the responsibility of any Nation having epidemic disease within its borders that such disease should not be allowed through negligence to afflict its neighbor; and second as to the desirability of a synchronous united effort looking toward final eradication; yet the moment the details by which these desirable ends were to be attained were discussed, harmony was at an end, and so it has happened that each Nation for itself assumes its own responsibilities towards its citizens, and allows its neighbor to adopt in turn such independent measures as in its judgment the occasion warrants.

It is, therefore, clear that international public sentiment must be created to compel these Nations owning cholera and yellow fever centres to no longer afflict the globe by their apathy and indifference to the general welfare.

"Who can doubt that if the action of Russia in respect of the plague, and of the United States in regard to yellow fever, were imitated by Great Britain, Burmah and China, as regards cholera; Spain, Brazil, Central America, Mexico, the West Indies, and the occidental littoral of Africa, in regard to yellow fever, that those two diseases would speedily disappear from the earth."

There is then a plain duty before this great Association which embodies the combined medical wisdom of the United States, and that is to lend its powerful aid toward the humanitarian side of this great question. Let this Section reaffirm the Montgomery resolution, and commend it for adoption by the Association. Its object is to enhance the welfare of humanity, and its accomplishment is within the bounds of possibility.

Washington, D. C., June 15, 1889.

THE METHOD OF FEEDING IN CASES OF INTUBATION OF THE LARYNX BY POSITION, HEAD DOWNWARD, ON AN INCLINED PLANE.

BY W. E. CASSELBERRY, M.D.,

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ICAL COLLEGE; LARYNGOLOGIST TO THE SOUTH
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Since the presentation to the Chicago Medical Society, in September last, of the preliminary verbal report on this method of feeding as just then devised by me, the subject has assumed such importance, and the method, as modified through further experience, has been so successfully practiced within a limited circle, that it is desirable to widely promulgate the device in its perfected and modified aspects.

The unavoidable entrance of food material into

the lower air-passages in process of deglutition has been the most serious drawback to the operation of intubation of the larynx. It has influenced many surgeons to reject or to abandon the procedure in favor of tracheotomy. Others have sought to obviate the danger by strictly withholding liquids—a plan which occasions in febrile patients indescribable agony from thirst, which is not relieved by the substitution of semi-solids and ice. The cry of water! water! water! from these little patients, alike when awake, during sleep, and in delirium, is yet ringing in our ears.

Many and ingenious were the devices to overcome the difficulty; the nasal feeding tube, the rubber epiglottis, the metal epiglottis tube, deep intubation, etc.—none of them adequate, and some of them not a little dangerous.

In June, 1888, through the courtesy of Dr. Frank Cary, I performed the operation of intubation of the larynx in a case of diphtheritic croup. We encountered the usual difficulties in feeding which I had before so frequently experienced. The nasal feeding tube was used with the customary partial degree of success only, ice was given, and still there was an incessant pitiable cry for water. We were much distressed on this account, and in despair for some expedient whereby liquid could be administered, it suddenly occurred to me to stand the child on its head and let it drink. A moment's thought sufficed to modify this radical position to one in which the inclination of the body head downward was just sufficient to prevent gravitation of liquid through the tube into the trachea, and to cause, rather, any portion which had been forced into the end of the tube during pharyngeal deglutition to flow back into the pharynx. By action of the pharyngeal and œsophageal muscles the liquid, of course, could be swallowed upward equally as well as downward, just as happens when one drinks, when leaning far over, from a spring.

In this position, illustrated in Fig. 1, the child would suck through a rubber tube from a glass and swallow without the slightest difficulty all the liquid which it desired.

In another case, treated through the courtesy of Dr. Frank Billings, a metal epiglottis tube was inserted, and an opportunity was thus afforded of testing the efficacy of the lid alone. In the upright position, with the epiglottis tube *in situ*, the patient could not swallow water or milk without coughing, indicating entrance into the trachea; while in the inclined position, head downward, it drank freely without difficulty.

The same degree of success has since obtained in other cases. Many of the younger patients will suck more readily from the nipple of an ordinary feeding bottle, although an open tube from a glass is the more rapid means with older children. A few have been found to swallow better

when fed, on the same principle, in the inclined abdominal decubitus; but the inclined dorsal decubitus is usually to be preferred, on account of the facility in assuming the position and of the greater certainty in maintaining a proper angle, although it is largely a matter of suitability to the individual case, whether the child should be inclined on the back, the abdomen, or even on the side. Some surprise is occasioned from the simplicity of the matter, that it had not previously been adopted. Two or three thousand cases had now been treated by intubation, and in all the necessity for a method such as this must have been apparent, but exhaustive inquiry has failed to elicit a previous use of the device in connection



with intubation of the larynx, notwithstanding the publication by Dr. R. Norris Wolfenden,¹ in 1887, of a note entitled "A Simple Method of Procuring Deglutition when such is Impeded by reason of Extensive Ulceration of the Epiglottis," in which he described a patient suffering from the tuberculous ulceration of the larynx, who could swallow not more than a teaspoonful of liquid at a time, and "this only at the cost of much pain and terrible paroxysms of coughing," who had learned for himself and subsequently demonstrated to Dr. Wolfenden, the "wrinkle" of lying stomach downward upon a couch, with head and arms hanging free over the end, in which position he could drink a large tumblerful of water with the greatest ease and comfort.

¹ The Lancet, July 2, 1887. The Journal of Laryngology and Rhinology, August, 1887.

Regarding the exact position, an angle of inclination of 20° is suitable to most cases, although this may vary slightly in either direction.

During the process a little fluid will gravitate into the naso-pharynx, to remove which the child must be made to swallow three or four times after the vessel of liquid has been taken from its mouth, and before it is permitted to regain the erect posture, otherwise this naso-pharyngeal residuum will gravitate through the tube and excite cough.

The patient can be inclined without inconvenience for a minute or more, although less time will suffice.

One element of danger, "*schluck pneumonie*," and a vast amount of deprivation and suffering are thus removed from the operation of intubation of the larynx, which, freed from the odium attached to these disadvantages, must become more general and exhibit better results; not that the entrance of food material into the lungs is the sole cause of pneumonia occurring in the course of diphtheritic laryngitis, for this complication frequently arises apparently by simple extension of the diphtheritic inflammation downward, and occurs, at times, after tracheotomy, when deglutition is unimpaired. Indeed, in 116 autopsies of intubation cases, presumably fed in the upright position, recorded by Dr. Northrup, of New York, not a particle of food could be found in the bronchial tubes, which would seem to prove the danger of pneumonia by aspiration to have been over-estimated; but as water and milk, the materials most likely to enter, would be the most difficult of identification after death, aspiration of them in considerable quantity must still be regarded as an exciting factor, and one which is capable of originating pneumonia in the absence of other causes.

Since it is now conceded that the use of rather small and loose tubes is preferable to tight fitting ones, the danger of their slipping out while in the inclined position cannot be disregarded. The liability is minimized by using an angle of inclination the smallest that will accomplish the desired result. Feeding unaccompanied by cough is then less likely to result in dislodgement of the tube than when the erect position is maintained and violent expulsive cough is excited at every act of deglutition.

Since June, 1888, Dr. E. Fletcher Ingals has nourished thus, very successfully, five cases, and Dr. F. E. Waxham has reported thirty cases, in all except two of which, he informs me, feeding was accomplished without difficulty by this means. Of this series he saved 50 per cent., an excellent result, to which, doubtless, the improved method of feeding contributed in large measure.

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ON THE PASSAGE OF PORTAL BLOOD INTO THE GENERAL CIRCULATION, AND ITS PROBABLE RELATION TO TOXÆMIA.

Delivered in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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The coma which occurs in some cases of cirrhosis of the liver never has been explained satisfactorily. It has been ascribed to a form of toxæmia, but just why there should be a toxæmia presenting such a history it is not easy to understand. This is but one of many interesting symptoms, the origin of which is attributed to toxic conditions of the blood—a subject just now receiving much attention.

One view of the matter appears to have been overlooked, and to this I ask your attention. It is the current opinion that the blood from the portal vein before it is fitted for the general circulation must first filter through and be modified—refined—by the liver. When the liver is congested and there is overfullness of the portal vein it doubtless happens that the blood traversing the liver is imperfectly acted upon by the hepatic cells and as a result irritating, toxic substances enter the general circulation, producing those symptoms known as biliousness. That this inadequacy of the liver does occur there is abundant authority to uphold, and I have no argument against it. On the contrary it is contended by the writer¹ that to whatever extent the liver fails to metamorphose the portal blood, to just that extent the blood departing in the hepatic vein is of the nature of portal blood, and is likely to induce systemic derangement.

We now come to an important proposition: It is that there exists inosculation of the branches of the portal with the systemic veins, which permit the flow of portal blood into the general circulation without having passed through the liver at all. Some of these inosculations are normally present, some of them are anomalous, and still others result either from diseases of the liver itself or from inflammatory processes involving its capsule and other surrounding structures.

Of those inosculations which are normally present, one of the best known is that which occurs in the hæmorrhoidal plexus, formed by tributaries of the inferior mesenteric, which terminate in the internal iliac. "The portal and general venous systems have a free communication by means of the branches composing this plexus."² Besides this there are anastomoses between the portal vein and branches of the vena cava; between the gastric and the œsophageal veins; between the left renal and veins of the intestine; between superficial branches of the portal and the phrenic veins;³ [recognized by Tiernan and found

by Freirich to exist in every case in which he had injected the portal ;⁴] between the epigastric, *et al*, and branches of the portal, as first described by Sappey,⁵ an anastomosis which probably is the same as that described by Luscha, [Anat. II, p. 339] as the *vena parumbilicalis*, and which he claims occurs in man and most mammals as a normal condition.

Schiff found that the circulation persisted in the liver after ligating the portal vein and the hepatic artery, and explained the fact by the entrance of blood through the para-umbilical veins.¹⁹ Finally, Lauder Brunton²⁰ states that a portion of portal blood, by collateral circulation, enters the systemic veins without entering the liver. Now as to those intercommunications which occur as anomalous and somewhat rare conditions, there are reported to medical literature many well-authenticated cases. A branch of the portal communicating with the iliac vein is reported by Giacomini.⁶ Another remarkable case is reported by Sperino.⁷ Hyrtl⁸ relates an instance of the union of the splenic vein with the vena azygos. In a very interesting article by F. Champneys⁹ reference is made to a large number of similar inosculation, normal and anomalous, mentioned by Henle, Rokitansky, Cruveilhier, Mérière, Serres, Reynard and others. Further data bearing on this point may be found in the writings of J. H. Russell,¹⁰ Mérière,¹¹ Peygot,¹² Burow,¹³ Bamberger,¹⁴ Klob,¹⁵ Schulze,¹⁶ and Monro.¹⁷

The fact that such intercommunications are established as a result of cirrhosis of the liver and other diseased conditions obstructing the ordinary current of portal blood, is attested by so much evidence that citations here are less necessary. In some instances there appeared such marked varicosis that the current in the vena porta was reversed, the congestion of the viscera relieved, and the ascites, previously existing as a striking symptom, was made to disappear. This passing away of ascites has been noted by many clinicians, and has generally been attributed to the causes mentioned, although it should be stated that portal systemic anastomoses of considerable size often exist while the ascites remains present. F. Champneys⁹ relates an interesting case wherein dropsy subsided owing to anastomosis, and parallel cases reported by Sappey, Hoffman and Hanot, are cited by Thierfelder,¹⁸ and, on the other hand, the same author accounts for the œdema of the lower extremities, and a relatively early œdema of the abdominal integument, by the back-flowing of the portal blood into the crural veins and epigastric veins respectively, thus impeding the return flow of venous blood to the center. It would seem highly probable that in those cases in which, after frequent tapping, the ascites entirely disappears, as stated by Flint¹⁹ and others, the reason is to be found in the establishment of collateral portal circulation.

Anatomical evidence that collateral portal circulation is set up in cirrhosis of the liver, is extensive ; amongst other authorities may be mentioned Gubler, Lyons, Virchow, Monneret, Renaud and many besides these. It is also well known that after peri-hepatic inflammation there frequently remains adhesions which unite the liver and diaphragm to such an extent that, through many small inosculation, there is a free communication of blood from one to the other. Such unions from inflammation are not rare, and it would seem that after examining the testimony all must admit that portal blood may pass around the liver and join the blood in the systemic veins, thus escaping those elaborate changes which the liver is supposed to bring about in the blood coming from the organs of digestion ; furthermore, it would seem as though this fact were, by normal anatomical arrangement, made possible to some extent in healthy individuals ; and it appears that in some anomalous and pathological conditions the communicating passages are so extensive that torrents of portal blood may enter the general circulation in the manner described.

Let us now pass to the consideration of the second proposition, namely : The blood of the portal vein is toxic. The liver intervenes and, acting the part of a physiological quarantine station, hinders the admission of disqualified material and hence prevents toxæmia. That the portal blood varies in its toxicity there is ample proof, but that it is generally unfit for systemic circulation there is every reason to believe. In the labors of Claude Bernard, Hegar, Schiff, Lautenbach, Jaques, Brunton, Roger, Bouchard, Gautier and others, affirmation of this statement is to be found. Peptones were discovered in the portal vein, and these substances when injected into the circulation were found by Ludwig, Schmidt, Muhlheim and later observers to be poisons.

Hegar, in 1873, found that nicotine when made to pass through the liver disappeared from the economy ; Schiff, in 1877, found this true of other alkaloids ; and Jacques, in 1880, found that some were destroyed in the liver and that others were stored up by the gland, at some later day to pass into the circulation, or to be excreted. Since the studies of Bouchard, Gautier, Vanghan, and others relating to animal alkaloids and extractives, we are better prepared to understand the real nature of the toxic substances which the liver is made to resist or modify, and we now more readily perceive how intestinal fermentation on the one hand, and intestinal antiseptics on the other, excites or retards the auto-intoxication well known to exist under certain conditions.

G. H. Roger,²² in a thesis published at Paris in 1887, relates the results of numerous experiments as to the toxicity of the blood, in which he shows that the blood of the portal vein is far more poisonous than that from other sources ; and he further-

more shows that the "supra-hepatic blood"—that is, blood immediately after leaving the liver—while far less toxic than that in the portal, is more toxic than that which circulates in the other veins. To this matter we shall after a time recur. It would seem unnecessary to devote further time here to the demonstration of a theory which is pretty well determined.

Having shown that the blood of the portal vein finds more or less ample channels for flowing into the general circulation without passing through the liver, and having shown that the portal blood is always more or less toxic, and sometimes intensely so, it is now incumbent to answer the natural inquiries, first, Why is it that there is not in all individuals an ever-present toxæmia, occasionally reaching a dangerous, or even fatal degree? And second, Why is it that when free anastomoses occur as a result of cirrhosis of the liver or other affections, coma, delirium, diarrhœa, propeptonuria and glycosuria do not occur as persistent symptoms? Admittedly these questions must be answered, and in turning to the reply let us first consider the next proposition, which is: Normally there exists in the portal vein a lower blood pressure than in the systemic veins. It will be seen that as a natural result of this, instead of the portal blood coursing into the systemic veins, in health the systemic blood would find its way into the vena porta. The low pressure in the portal vein is doubtless determined by the pump-like action exerted on the liver by the diaphragm during respiration, and by the fact that, unlike the veins of the general system, the branches of the portal lack the support and pressure of the muscles. However it comes about, it is maintained, as stated by Lauder Brunton,²³ that the blood-pressure in the portal vein is very low.²⁵

Is it not reasonable to suppose, then, that this difference in blood-pressure is the means by which nature protects the system from the toxæmia which would probably follow the free passage of portal blood into the general circulation?

There can be no question, however, but that when the anastomoses are very large and numerous, the inflowing systemic blood would soon practically equalize the pressure, but even in these cases the tendency would be towards the portal current and not away from it, save in instances of obstructive liver disease or the equivalent. So it would appear that under ordinary circumstances toxæmia would not result from even free anastomosis.

But extraordinary circumstances occur. From indiscretions in diet, from sedentary habits, from the irritation of drugs, or from exposure there supervenes a congestion of the liver, an obstacle to its circulation; from this impediment to the portal stream there is established an unusual portal pressure, a pressure greater than that in the

systemic veins. Naturally the portal blood freighted with its peptones, its bile, its animal alkaloids and all its poisons, finds its way in greater or less proportion into the general circulation and toxæmia is the result. How often are there cases accompanied by hæmorrhoids, tenderness over the hepatic region, languor, a coated tongue, anorexia, headache and the multiplicity of toxæmic symptoms; how often do we give cathartics to deplete the portal circle; and how often success follows our measures. Certainly such experiences are suggestive, but they are not so conclusive as are those which we have in cases of cirrhosis of the liver, when the portal vein is always found distended, when from collateral circulation the neighboring veins are enlarged—when from anatomical²⁴ as well as from physiological reasons we may be sure there is a blending of the streams.

And finally, when ascites disappears and the other signs and symptoms of cirrhosis continue, the most doubting must confess that here, indubitably, the portal blood invades systemic veins, and produces certain results. To name these results would be to mention many of the symptoms of hepatic cirrhosis, the most striking of which is that one spoken of in the beginning of this paper—the coma of cirrhosis—a symptom for which J. Hilton Fagge confessed himself unable to account.

But, I have been asked, why is it that this symptom is so rare in a disease which is so common? Why is it that patients do not present symptoms of intense toxæmia more persistently? Why is it that acute symptoms follow a temporary obstruction of the liver while insignificant symptoms attend a chronic obstruction? In reply I would suggest that this is quite parallel to what ordinarily happens in other acute and chronic maladies; that the organism gradually accommodates itself to circumstances. A further answer may be found in the following proposition, viz.: When the integrity of the blood is not seriously diminished it is equal to the metabolism of nutritive substances, and to the destruction of toxic substances, coming to it under certain conditions. Any man may satisfy himself of this by remembering well-established facts in physiology. The blood in the hepatic vein is more poisonous than that in the vena cava. After a meal it contains glucose, fat, albumens, and sometimes peptones. Further along in the veins they disappear; what has become of them?

The thoracic duct carries besides fat, proteids, glucose, extractives, etc., to the vena cava. They disappear in the blood; and one must admit that this fluid has a function of assimilation and dissimilation that reminds a person wonderfully of the liver. Perhaps we do not sufficiently recognize how the organs lend and borrow; and that neighborly kindnesses in services rendered exist

inside as well as outside of us. At any rate, proof of this function of the blood can be seen unmistakably in what takes place in the portal vein; for, whereas at its beginning it, during digestion, is found loaded with peptones, these, in good health, have almost entirely disappeared before reaching the liver. It is apparent that these statements must pass unchallenged, and so, I think, will the proposition.

Now it seems to me that the blood is for a period able successfully to oppose, and partly to appropriate that which the portal empties into it; but there comes a time when its integrity is diminished, when its resistance is overcome, and then its toxicity in one respect or another becomes such that definite symptoms thereof become apparent. It would be interesting, perhaps, in this connection to make some reference to lithiasis, glycosuria, transient albuminuria, etc., and to those individuals who, during life, are cachectic, splenetic, and sick, but who show on autopsy no lesions which adequately explain the condition; but circumstances will not permit.

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DISCUSSION.

DR. J. H. MUSSER, of Philadelphia, congratulated Dr. Stockton on the very ingenious arguments he produced to maintain his thesis. The question, however, obtains so much of a physiological aspect that he felt quite incompetent to discuss it. Clinically he had never seen any cases of hepatic coma, so-called, or the coma of cirrhosis, that could not be accounted for either by cholæmia, uræmia, or a toxæmia due to loss of function of the liver. This, of course, was only his experience. He would state that in all cases of hepatic coma there was either pneumonia, active congestion of the lungs, or some inflammatory condition, however small, sufficient to overthrow the balance of the economy, and hence disturb the functions which destroy any deleterious matter in the blood, if such is the power of that tissue, or to interfere with glandular activity by which ptomaine-poisoning or the like is made possible. Such disturbance of the circulation and nervous system as a local inflammation induces coma will

cause such changes of function as Dr. Stockton argues to arise from other circumstances.

DR. OSLER, of Baltimore, thought that the point referred to by Dr. Stockton is one of serious import. He was not sure, however, but that it is only partially true. He doubted whether the question thus received its solution. He believed that the collateral circulation is a constancy. This must meet the blocking up of the channels. The same condition obtains as in narrowing of a valve of the heart. Every one has found in post-mortem examinations, extreme cirrhosis of the liver without a single symptom during life, and yet in such instances a great proportion of the portal blood passed into the general circulation. Furthermore, in cases of fibroid obliteration of portal vessels, the portal blood for years passes through the circulation.

DR. TREMAINE, of U. S. A., thought that the essayist had made a mistake in regard to the portal circulation; it is part of the venous circulation only interposing the liver. The purposes for which the venous blood passes through the liver are not clearly understood. He would rather explain the results by a defect on part of the action of the cells, whose office it is to eliminate the toxic elements.

DR. H. A. HARE said that he thought perhaps Dr. Stockton had lost sight of the more recent studies of Schiff and Lautenbach, viz.: that any capillary network is capable of rendering blood containing toxic substances innocuous. The lungs, for example, are similarly destructive agents. Capillaries are oxidizing agents *per se*, as a shallow pebbly brook is an oxidizing agent. That oxidation does occur is proved by the high temperature of the blood leaving the liver. Further, all peptones are not poisonous, but it is rather the pana-peptone, or hemi-albumose, which is abnormally absorbed and caused toxæmia. Peptones are normally absorbed, and predigested food by the rectum ought to cause toxæmia if all peptones were poisonous. Again, the argument of Dr. Stockton is faulty since the inoculations are constant and the toxæmia is rare.

DR. STOCKTON, in reply, said he felt much gratification over the discussion to which the paper had given rise. He did not consider that the

¹ Nutrition in Lithæmia, Stockton, Trans. N. Y. State Medical Assoc., Vol. ii, p. 371.

² Gray's Anatomy, 1887, pp. 632 and 634.

³ Physiological Anatomy, Todd & Bowman, 1859. Vol. ii, p. 348.

⁴ Diseases of the Liver, Wood's Edition, Vol. ii, p. 81.

⁵ Sappey, *Traité d'Anatomie*, 2d edition, iv, Paris, p. 329. Also

Bulletin de l'Académie de Médecine, Paris, 1859, Tom. xxiv.

⁶ C. Giacomini; Giorn. d. R. Accademia di Med. di Torino.

Torino, 1873, xiv; ser. 3, 584-621; 2^o 2^o.

⁷ Sperino, Torino, 1879. Repr. from Giorn. d. R. Acad. di Torino.

⁸ Mediz. Jahrbücher der K. K. Oesterreichischen Staaten. Bd.

xxvii, and in *Luscha. Anat. des menschlichen Branches*, p. 338.

⁹ Jour. of Anat. and Phys., London, 1873, vi, 417-420.

¹⁰ Idem, 1873, viii, 149.

¹¹ Arch. gén. de Méd., Paris, 1862, x, 381.

¹² Quoted by Cruveilhier, *Anatomic pathologique*, 1838, Vol. 2.

¹³ Archiv. für Anat. und Phys. von I. Müller, Berlin, 1838.

¹⁴ Schmidt's Jahrbücher, Leipzig, 1857.

¹⁵ Leitschr. d. Gesellsch. d. Aerzte zu Wien, 1859, ii, 46.

¹⁶ Disput. anat. select. V. Albertus Haller, Göttingen, mdcc.

¹⁷ Elements of Anatomy, 1825, ii, 282.

¹⁸ Ziemssen's Cyclopadia, Vol. ix, p. 189.

¹⁹ See Diseases of the Liver, p. 20. Dujardin-Beaumetz, Am. ed., 1888.

²⁰ Lauder Brunton, Disorders of Digestion, p. 23.

²¹ Idem, p. 43.

²² In Thesis, Paris, 1887, Action du foie sur les poisons, p. 97, chap. iv.

²³ Disorders of Digestion, p. 25.

²⁴ Dujardin-Beaumetz, Diseases of the Liver, p. 153.

²⁵ I am permitted to mention a series of experiments made by my colleague, Prof. Julius Pohlman, of Buffalo, demonstrating that in each of a number of dogs examined—some while fasting, some just after eating, some between fasting and feeding—the blood-pressure of the portal vein was far below that in the systemic veins. During digestion the portal pressure was increased, but it was never near the pressure in the systemic veins. These experiments will be published.

criticisms, in the main, were contrary to the claims made in the paper. Notwithstanding the late investigations mentioned by Dr. Hare, the fact remains that peptones disappear in the blood without passing through a capillary network. The claim made that the blood-pressure in the portal vein is lower than in the systemic veins, thus making a protection to the systemic circulation, was not spoken of. This should be explained. When the portal pressure becomes the higher, toxic conditions appear; and but for the action of other organs than the liver, and of the blood to purify itself, more conspicuous symptoms would appear. When the resistance of the blood fails, then toxic symptoms do occur.

MEDICAL PROGRESS.

ON A NEW DIURETIC IN HEART DISEASES.—Experiments and investigations made by M. GERMAIN SÉE (Paris) concerning the effect and value of milk in heart diseases, have led to the following conclusions:

1. Lactose constitutes at the same time the most powerful and the most inoffensive diuretic. It alone imparts to milk its diuretic properties. The other principles of milk, especially the water and the salts, have no manifest or useful effect, the chlorate of soda does not add anything to the polyuria, which is due to milk sugar, and even the salts of potash have but a limited action.

Milk taken in quantities of 2 litres causes diuresis, but in quantities of 4 litres (each of which contains 50 grams of lactose) it induces at the same time a pronounced glycosuria, a transitory diabetes, as a quantity of 200 gr. of sugar thus absorbed is eliminated by the urine. At the same time a considerable excretion of urea indicates a destruction of the albuminates. There is consequently glycosuria and azoturia at once.

Milk sugar renders it possible to avoid these inconveniences and dangers. One hundred gr. of lactose in a draught produce an enormous diuresis which we are not sure to obtain with 4 or 5 quarts of milk. With the lactose there is neither glycosuria nor azoturia. In milk the effect of lactose is impeded by caseine and fat.

2. The polyuria resulting from the internal use of 100 gr. of lactose exceeds all the other artificial polyurias; it increases rapidly to 2½ litres, and almost constantly rises to 3½ and even to 4 and 4½ litres on the third day. Then it remains stationary or decreases to 2½ litres for several days. During that time the dropsical symptoms disappear with almost absolute certainty, the blood is freed from hydrates, and this is the reason why the diuresis is no longer as intense as at the beginning of the treatment. But after a few days of rest another dehydration of the blood and

resorption of dropsical accumulations may be obtained in the same way.

3. Effect on dropsy of cardiac or renal origin. It may be said that lactose has a sure effect on dropsy of cardiac origin, but its action is doubtful or even nothing in dropsy of renal origin. In affections of the heart it fails only in cardiacs where the kidney is affected with Bright's disease, and when the albumen increases to 0.60 or 1 gr. per litre. As long as the quantity of albumen is small the result is favorable, which leads to the supposition that in these cases there is no renal lesion, but simply a stagnation of the blood. By diuresis from lactose the degree of alteration in the kidney may also be measured.

4. Time for the cessation of the diuresis. Administration of lactose. Sometimes the diuretic action is found to be interrupted by causes other than lesion of the kidneys. A diarrhoea may ensue which naturally diminishes the diuresis. In other cases the patients have for a longer or shorter time profuse sweats or accidental transpirations which diminish the polyuria, but it soon reappears.

The medicine is generally well borne. It should be given for eight or ten days, which would suffice to bring about a noticeable dehydration of the blood; then a pause is made of a few days, when its administration may begin again. The lactic draught is somewhat insipid, but its taste may be improved by adding a little brandy or peppermint. In all cases it is of importance to diminish or even to stop all other drinks, including bouillon and especially milk, which becomes useless as a diuretic, and encumbers the stomach and impedes digestion of other nourishments. Also in this respect lactose has great advantages, as it permits the patient to eat all kinds of food, even meats, which are often indispensable to sustain the sinking forces of a cardiac patient who has arrived at the last stages of the disease.

5. How lactose acts. Therapeutic comparison with other diuretics. The above facts being known the question arises concerning the mode of action (which might be called physiological) of this new diuretic. We know that diuretics often act through the high blood pressure which they cause, but with the present substance pulse and pressure are not altered. The alkaline salts are credited with producing the diuresis by virtue of their osmotic power, and especially the salts of potash possess this. But we do not obtain any better results by adding 2 gr. of potash to each litre of lactose portion than by the lactose alone. As the latter does not pass the kidneys it can act only through osmosis, and we must admit an elective and selective action of lactose upon the secretive elements of the kidneys; it is a renal physiological diuretic.

On comparing it with the other diuretics we find the following: Those which augment the blood pressure, the cardio-vascular substances, to wit: digitalis, convallamine, strophanthus, act

much more feebly, less surely and less effectively upon dropsy than lactose. Bucquoy, with his well-known honesty and genuine scientific mind, has recognized its superiority in this respect to strophanthus, which he himself had favored.

A second group of diuretics, the only one thoroughly established so far, comprises the renal diuretics proper, in the first place caffeine. It forms part of a chemical series which begins with xanthine, includes theobromine and ends with caffeine, the most methyled of these substances. It is already known:

1. That caffeine and theobromine are renal diuretics like lactose.

2. That both of them act independently of vascular pressure, for one may cut the vaso-motor centres and destroy the vascular nerves without hindering in any way the caffeine diuresis.

3. That they have no tonic effect upon the heart, as was supposed, and in this regard they likewise resemble lactose. But caffeine causes nervous and cerebral troubles unknown to lactose.

6. We possess, therefore, in lactose, the diuretic for heart troubles at the asystolic period, the genuine cure for dropsy of cardiac origin, even for those kinds of dropsy which resisted other polyuric agents. In asystole there is another extremely dangerous accident liable to occur—dyspnoea; against this lactose is powerless, so it must be aided by iodide of potassium. This substance constitutes through the iodide and the potassium the proper medicine for heart and circulation. It lacks only diuretic power. To meet all indications iodide should be combined with lactose.—*Le Bulletin Médical*, No. 47, 1889.

DIAGNOSTIC SIGNIFICANCE OF INCREASE OF THE KNEE PHENOMENON AND OF THE FOOT CLONUS.—In an interesting article on this subject by TH. ZIEHEN, published in the *Corresp. Bl. des Allg. ärztl. Vereins von Thüringen*, No. 1, 1889, the author arrives at the following conclusions: An increase of the phenomenon in both knees may be regarded as morbid, and significant only if foot clonus exists at the same time. An increase of the phenomenon in one knee only is always a symptom of disease. In healthy adults foot clonus is extremely rare, consequently a pathological symptom. In children, even when healthy, foot clonus occurs parallel with a physiological increase of the tendon phenomenon; especially in early years increase of the knee phenomenon seems the rule. For adults the following holds good: Foot clonus not accompanied by other marked objective symptoms is indicative of epilepsy or neurasthenia; with hemianæsthesia of the sensitive nerves; of hysteria; in acute atrophies of amyotrophic lateral sclerosis; with simultaneous intestinal trembling of multiple sclerosis; foot clonus with spastic-paretic walk of spastic spinal paralysis and progressive paralysis; with disturbance

of speech and idiocy of progressive paralysis, multiple sclerosis and epilepsy; with anæsthesia and paralysis of the lower half of the body; of dorsal and cervical meningitis. Foot clonus on one side with hemiplegia or monoplegia of one leg indicates a cerebral organic or hysterical affection more frequently than a spinal organic affection.—*Wiener Medicinische Wochenschrift*, No. 33, 1889.

REGARDING THE CENTRES OF INNERVATION OF THE SMALL INTESTINE.—J. PÁL and J. E. BERGGGRÜN studied in Stricker's laboratory the changes in the peristaltic movements of the intestines under the influence of vagus irritation on dogs poisoned with curare, and found (*Med. Jahrbücher*, 1889) that the movement of the small intestine (jejunum and ileum), after irritating the peripheral vagus pedicle, did not ensue regularly until the spine had been cut in the neck. They inferred from this that by cutting the spine in the neck impediments are removed which prevented the peristaltic movements before cutting. Further experiments showed that the obstructing fibres extend through the medulla oblongata and as far as the gyrus sigmoideus. From the fact that after cutting brisk injection of the intestine followed, the authors concluded that vascular nerves run alongside these inhibiting fibres. The irritability of the duodenum from the vagus does not follow that of the jejunum, but that of the pylorus region of the stomach, as previous experiments have shown.—*Wiener Med. Wochenschrift*, No. 23, 1889.

ON THE DISTINCTION BETWEEN KOCH'S BACILLI AND THE BACILLI OF FINKLER-PRIOR.—M. SCHENK (Vienna) tried to raise microbe cultures on the albumen of the lapwing eye, and succeeded in discovering differences in the evolution of microbes the distinctive character of which had not previously been found. So the cultures of Asiatic cholera (Koch) and of cholera nostras (Finkler-Prior), which had not appeared so far to be different, acted differently on albumen of the lapwing eye. The bacillus of Finkler-Prior liquefies and discolors the centre of the culture, whilst that of Koch leaves it intact.—*Le Bulletin Médical*, No. 45, 1889.

ON HYSTERICAL COXALGIA.—M. BALLET presented to the Société de Biologie a patient who had all the symptoms of a genuine coxalgia: flexion with slight abduction of the thigh, atrophy of the muscles, etc. It was only a case of hysterical coxalgia, however: the remains of an ancient hemiplegia of the same nature, resulting from excessive use of alcohol. This fact is interesting, since it proves once more that hysterical paralysis may be accompanied by atrophy.—*La Semaine Médicale*, No. 27, 1889.

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SATURDAY, AUGUST 24, 1889.

THE FORMATION OF GALL STONES.

The rationale of the formation of gall stones is not well understood. We know they are usually formed in the gall-bladder, and they may also form in the common, the cystic, the hepatic duct, and in the intra-hepatic ducts. They occur most often in the female, and usually in middle life. Sedentary habits and local peculiarities of climate are seemingly predisposing causes. Taurocholic acid or taurocholate of sodium is the agent which holds the solids of the bile, cholesterin, biliary pigments, lime, salts, etc., in solution. Why these solids should be precipitated to form calculi is the point in doubt. Foreign bodies in the biliary passages will form nuclei for calculi, and calculi with parasites, fruit seed, particles of mucous have been found in the ducts, but rarely, if ever, in the gall-bladder. Evidently other causes must exist. It is known that fermentation of the bile will cause a precipitation of its solids. Retention of the bile in the gall-bladder and ducts, from any cause, will render the bile less fluid by the absorption of the watery portion, and favor precipitation of the solids. F. MARCHAND (*Deutsche Med. Wochenschrift*, 1888), believes that tight lacing and the corset liver (*Schnur Leber*), is the cause of the more frequent occurrence of biliary calculi in the female. In many post-mortem examinations he has verified his observation. The pressure of the corset or waist-band is applied over the neck of the gall-bladder or cystic duct, causing retention of bile, and consequent condensation of it. A rough

condition of the mucous membrane of the biliary passages and gall-bladder will also favor the formation of calculi. Carcinoma of the gall-bladder or ducts is usually complicated with calculi. This formation in carcinoma is also due doubtless to retention of bile.

Catarrhal inflammation of the biliary passages is said by most authorities not to predispose to, or cause, the formation of calculi. That this is an erroneous idea is proved by clinical evidence. In chronic catarrhal duodenitis or gastro-duodenitis the biliary ducts often become involved, causing sufficient retention of bile to so condense it that perfect casts of the common bile duct are often found in the fæces. That such casts are not oftener found is doubtless due to the non-examination of the fæces. It is fair to infer that a chronic catarrhal inflammation may extend from the bowel through the ducts to the gall-bladder. With such an inflammatory progression, would naturally go the fermentative germs of the bowel. Such a condition would directly favor the precipitation of bile solids in the gall-bladder; that is, retention from partial or complete temporary occlusion of the hepatic duct, and fermentation of bile through the zymogenic germs from the bowel. The increased mucus in consequence of the inflammation would also be present to form nuclei. Chronic catarrhal duodenitis is a very common disorder, and occurs more frequently in females than males, probably because females take relatively more of the hydrocarbons than males.

SUGGESTIVE THERAPEUTICS.

Very little scientific attention has been given to hypnotism in this country, and an opportunity is now presented to American physicians to become acquainted with the subject as presented by DR. H. BERNHEIM in his treatise on the nature and uses of hypnotism, which has been recently translated by Dr. Christian A. Herter, of New York.

The hypnotic state, according to Bernheim, is not the exclusive lot of rare neuropathic cases. According to Liébault one-fifth or one-sixth of all subjects are hypnotizable, and while some of the susceptible are hard to hypnotize, most of them can be overcome by a little perseverance and determination on the part of the operator. The hypnotized person is by no means a lifeless

body, or one in a state of lethargy, as some may imagine; though he is inert he hears, is conscious, and often shows signs of life. He may laugh, or try to smother a laugh. He may remark upon his condition. He sometimes pretends that he is cheating, or that he is trying to be obliging. The majority, however, feel that they are influenced; that they are in the power of the operator. Hypnotism manifests itself in different ways in different subjects. There may be simple drowsiness, or other induced sensations, as heat, pricking, etc. This is the lightest influence. When the suggestion affects motility there may be more marked effects, the cataleptic condition may be developed, there is inability to move, and there are contractions and automatic movements. When the suggestion affects the will and causes automatic obedience it is still more decided. All these manifestations of motion, will, and even sensibility, says Bernheim, can be affected by suggestion with or without sleep, and even when it is powerless to induce sleep. In a more intense degree suggestion produces sleep or the illusion of sleep.

To define hypnotism as induced sleep, says Bernheim, is too give too narrow a meaning to the word; such a definition overlooks the many phenomena that suggestion can bring about independently of sleep. Bernheim defines hypnotism as the induction of a peculiar psychical condition that increases the susceptibility to suggestion. It is often true that the sleep that may be induced facilitates suggestion, but it is not the necessary preliminary. It is suggestion that rules hypnotism. Suggested sleep does not differ from natural sleep. The same phenomena of suggestion can be obtained in natural sleep, if one can succeed in putting one's self into relationship with the sleeping person without awakening him. The new idea that Bernheim proposes concerning the hypnotic influence, the wider definition that he gives to the word hypnotism, permits us to include in the same class of phenomena all the various methods that, acting upon the imagination, induce the psychical conditions of exalted susceptibility to suggestion with or without sleep. Such is the case with fascination induced by a brilliant object, or by the gaze. Some subjects submit to the influence without sleep; they are susceptible to suggestions in the waking states. They remember afterward what they have done,

and do not know why they were unable to keep from following and gazing at the operator. Others do not remember what has happened; they have been in a somnambulistic state with the eyes open. In this somnambulistic fascination catalepsy and hallucinations may be induced, often by a simple word, a gesture, or a position communicated to them without previous fascination.

Various phenomena are manifested or may be induced in hypnosis. Nervous subjects sometimes have muscular twitchings of the limbs and febrillary contractions of the face while asleep; but the majority are inert, or become so after suggestion. Sensibility is more or less modified; in light sleep it is preserved; in deep sleep it is diminished or totally destroyed. In a few cases the hypnotic insensibility is enough to enable the most difficult surgical operation to be performed; but hypnotism can by no means take the place of ether and chloroform. Changes in motility are more easily induced than changes in sensibility. But a deeper degree of hypnotic suggestion is required for the induction of automatic movements than for simple catalepsy. Suggestion also induces paralysis as well as contracture. This suggestive paralysis has special characters, which may be distinguished from other paralyses of organic origin. At the will of the operator general sensibility and the special senses may be modified, increased, diminished, or perverted, and in the advanced degrees of hypnosis all illusions and hallucinations may be successfully carried out with great precision, and all actions that the operator commands are successfully carried out.

According to Braid the pulse and respiration are at first slower than normal in hypnotism; but as soon as the muscles are put into activity a tendency to cataleptiform rigidity is produced, with increase of the pulse-rate and rapid and laborious respiration. Heidenhain noticed an augmentation of the salivary secretion, and Tamburani and Seppili noticed that at the time of the transition from the waking condition to the hypnotic state, the respiratory movements became irregular, unequal, and more frequent, the cardiac and vascular pulsations increased, and the face was congested. But Bernheim claims that these symptoms are not induced in patients hypnotized by the quiet method of suggestion, who retain their mental tranquility; nor by those that having been al-

ready hypnotized several times go to sleep with confidence and without emotion or agitation. Suggestion may act upon the vaso-motor circulation; a red spot may be produced upon the body by suggestion, or even a blister may be raised, and hæmorrhages and bloody stigmata may be induced. Bernheim suggests that experiments might be instituted to determine to what degree imagination may influence certain functions in the waking condition. We know that micturition and defecation are greatly influenced by the will, idea, and imagination. By concentrating the mind upon the phenomenon, can we not also produce an increase of heat in certain regions of the body, perhaps even without hypnosis?

That hypnotic suggestion is a valuable therapeutic agent there can be no doubt. It has been employed successfully in organic affections of the nervous system. True the results obtained are often transient; but even a brief respite from the troubles of organic nervous affections is a blessing to the patient. Even in chronic and incurable affections suggestive therapeutics is not useless. It is of undoubted value in hysterical affections. It is important that the suggestion be varied and modified according to individuality, and its efficacy varies according to the subject and the circumstances. It has been found useful in various neuropathic affections, in epilepsy, insomnia, repeated headache, gastric and general neuroses, neuro-arthritis, rheumatic and nervous pains, melancholia, anorexia, writer's cramp, etc. Bernheim does not claim that hypnotic suggestion is a cure-all. He has written an interesting and instructive book upon a subject that deserves careful study.

CONSIDERATE JUDGMENT.

Theories are of human invention, and are but portraiture of human limitations and human weaknesses. Facts have a kind of divinity above and beyond the sphere of human agencies. While theories may perish in a day, they alone are unchangeable.

The world is full of theories—while its greatest poverty arises from its need of facts. So great is the want of them, that the bringing to the light of one hitherto undiscovered practical truth renders a life worth living. And all the fine spun theories that have found their expression in successive phases of medical literature have only been

abiding, as they had their foundation in fact.

It is a confession of human weakness, yet not a matter of surprise, that theories have had their birth in every yesterday; their development in every to-day, and their deaths in every to-morrow. The mesian line which segregates the knowable from the vast unknowable which lies beyond is so mysterious and so obscure, that perception, reason and judgment alike confess their weakness and the limitation of their powers. In the study of biology, of physiology, of pathology, and of their modifying environments, the student of medicine often stands as upon enchanted ground. He is painfully conscious that he is within the domain of the knowable; that grand truths are at his finger tips, and he longs to grasp and bring them clearly into light. It is just here that the majesty of great minds is manifest. The power of self-control, to calmly bide the time until beyond question a fact is clearly demonstrated, this is the crowning act of a master mind, the exercise of considerate judgment.

This power of deliberate estimate of evidence more than anything else has been the need of the medical profession in the past, and more than anything else, it is its need to-day. Fancies oftentimes overleap the facts in their haste. Men build their theories upon such foundations, only to wonder that they come to nought so soon.

What the medical profession most needs is the revelation of new facts. What best can serve the world is the revelation of such facts, and there are no such benefactors as those who are giving themselves to original research and the discovering of new truths. We have had our fill of finely devised theories. The present and the future demand is and will be for facts. And we must patiently wait for the demonstration of these facts. We are on the confines of new discoveries as to the agencies of microbes in the production of disease. We have nearly everything yet to learn with reference to their development, their potencies, and the methods of their control.

We are confronted with new questions as to the respiratory powers of the leucocytes and their agencies in the production of animal heat, and with the modifications of their form which govern the activities of their oxidizing powers. We may thus perhaps be led to apprehend more clearly the *modus operandi* of antipyretics in the control of temperatures.

We are yet to learn the connection of electricity with the trophic activities of the tissues, and by what means false growths are retarded, and even obliterated.

Many such are the questions which invite—nay, which challenge investigation, and with reference to which, while we wait in eager expectancy, we can by no means afford to form *prematuration opinions*. We must bide the needed time for actual demonstrations, that our conclusions may be of permanence and value. In nothing more do we need considerate judgment than in our estimates of remedial agents: Here fancy and the wildest imaginations run riot. Not a theory of cure but has its devotees; not a remedy or a nostrum but has its unqualified certificates of cure.

Men with reason and men less gifted alike contribute exaggerated expressions of their faith in all sorts of treatments and of remedies. If ever there was need of the culture of considerate judgment it is here.

And just now, we commend this need to those who are canvassing the merits of Brown-Séquard's Elixir of Life. Let a calm and dispassionate consideration of facts on the part of those who propose to give this article serious attention precede the formation and expression of definite judgments. And we forewarn those who propose to make practical demonstration of its virtues to exercise at least the caution that Hammond enjoins, lest septicæmia and embolism and death follow speedily in the footsteps of reckless experimentation.

EDITORIAL NOTES.

HOME.

THE LICENSE ACT IN NEW HAMPSHIRE.—The law recently passed by the Legislature of New Hampshire for the regulation of medical practice, has had but a short life. A decision has been rendered, by a full bench of the Supreme Court, that it is unconstitutional to require a license as a prerequisite for medical practice. The medical registration act of Maine had a shorter life, even, than that of New Hampshire; since the signature of the Governor was hardly dry upon the bill before that official changed his mind and drew his pen through his name. The President of the State Medical Society, Dr. Stephen H. Weeks, of Portland, took the ground that the bill having once been signed, the subsequent erasure of his

name by the Governor was null and void, and a suit at law has been going on for a year or more to determine which should hold good, the signature or the erasure. The decision has just been reached, in the Supreme Court, and this is adverse to Dr. Weeks and his contention on behalf of the bill. The importance of the registration act to the profession in that State is so great that an effort to pass a like bill *de novo* will be made by the State Society, when the Legislature next convenes.

EXAMINING BOARD FOR TENNESSEE.—Under the law recently enacted in Tennessee, the Governor has appointed the following to serve as a Board of Medical Examiners: Drs. James B. Murfree of Murfreesboro, T. J. Happel of Trenton, E. E. Hunter of Elizabethtown and Heber Jones of Memphis, all members of the State Medical Society; also W. B. Halbert, eclectic, and T. H. Hicks, homœopathist. Under the terms of the act, not more than four of the six examiners may be representatives of the same "school of practice." The Board has met and organized by the election of Dr. Murfree to serve as President, and Dr. Happel as Secretary and Treasurer. Dr. Happel is the retiring President of the State Medical Society.

THE PERIL OF A PHYSIOLOGIST.—Dr. Weir Mitchell has recently given in *The Century* a decidedly unpleasant experience which befell him while pursuing his investigations concerning the poisons of serpents, especially of the rattlesnake. The snake generally aims his stroke with his poison-fangs with accuracy, but he may make a failure. "The serpent sometimes misjudges distance and falls short, and may squirt the venom four or five feet in the air, doing no harm. I had a curious experience of this kind, in which a snake eight feet long threw a teaspoonful or more of poison athwart my forehead. It missed my eyes by an inch or two. I have had many near escapes, but this was the grimmest of all. An inch lower would have cost me my sight and probably my life." And yet with all his wierd experiences Dr. Mitchell confesses to a certain degree of fascination for the horrid crotalus, and he actually speaks in a tone of regret of the rapidly approaching extermination of the reptile in this country. Dr. Mitchell further states that by the use of the "serpent-staff," a contrivance

which jugulates the snake close to the head, the dangers of laboratory work have been reduced to a minimum, and the physiologist has no need to bring his forehead into direct range with the thrust of the rattler's fangs.

DR. OSCAR J. COSKERY, a member of the Association since 1885, has died at Baltimore in his forty-seventh year. He was graduated from the University of Maryland in 1865 and immediately joined the volunteer staff of the State forces as assistant surgeon. He was not yet 30 years of age when he was elected to the Chair of Surgery at the College of Physicians and Surgeons, Baltimore. He was a prominent contributor to the transactions of the Medical and Chirurgical Faculty of his State, generally in regard to some question of surgery or of hospital organization. He was for many years attending physician to St. Joseph's Hospital. His death occurred on July 5th, from general tuberculosis. He was a man of more than ordinary ability and of high aims, and when we consider his relative youth he had accomplished much.

CONSTITUTIONAL LAW.—The *Legal Adviser* says: A State statute which requires every physician to procure a certificate from the State Board of Health that he is a graduate of a reputable medical school, or has practiced in the State ten years, or had passed a satisfactory examination as to his qualifications, and which makes the practice of medicine without such certificate a misdemeanor, is a constitutional regulation, and does not deprive a physician who has practiced in the State for six years before the passage of the Act of his liberty or property, without due process of law. There is no such "vested right" or "estate" in a profession that the State can not at any time impose upon its exercise such reasonable and appropriate qualifications as are demanded by the public welfare. *Dent v. West Virginia*, 9 Sup. Ct. Rep. 231. (The court distinguish *Cummings v. Missouri*, 3 Wall. 277, and *ex parte Garland*, 1b. 333, as being cases in which the alleged qualifications were, in reality, penalties imposed for past acts, and not reasonable qualifications imposed upon the exercise of professional callings. These decisions, it is said, merely decide that preachers and lawyers "can not be deprived of the right to continue in the exercise of their respective professions by the exaction from them of an oath as to their past conduct respecting matters which have no connection with such profession").

FOREIGN.

A BENEVOLENT EMPRESS.—The Empress of Japan takes a great interest in the welfare of her suffering subjects. In a year she has contributed \$7,500 out of her "pin money" to assist the Tokio Female Hospital in its good work.

THE PLAGUE IN ARABIA.—The south-west coast of Arabia, bordering on the Red Sea, is again the situation of a reported recurrence of the plague. The *Lancet* of July 20, states that active sanitary measures will be enforced to prevent the spread of the disease. The dates of former visitations of the plague, at this locality, were 1853, 1874 and 1879.

IN FRANCE an association "for the protection of the interests of the medical press," has recently been founded in Paris. The Chamber of Deputies, on a proposition made by Dr. Javal, have decided to exempt the fathers and mothers of seven children from personal or house taxes.

IN GERMANY five years is to be the obligatory period of medical study, including the term of military service. Prof. Engler, of Breslau, has been appointed to the chair of Botany in Berlin University. Dr. von Gossler, Prussian Minister of religion, education and medicine, desires to revive the study of the history of medicine in the Prussian Universities. Dr. Stahl, Professor of Botany at Jena, will leave for Java in October, to make botanical researches there.

IN GREAT BRITAIN, Prof. Robert Bentley, the venerable and able instructor in botany and materia medica has withdrawn from active labors. The British Pharmaceutical Conference meets at Newcastle-on-Tyne, on September 9. The Royal College of Physicians will coöperate with the Father Damien Memorial Committee. Surgeon-General Galbraith died at Cairo on the 31st ult. The Milroy Lectures on State Medicine will be delivered next year by Dr. Ransome, of Manchester, the Goulstonean Lectures by Dr. G. N. Pitt, the Lumleian Lectures by Dr. Hughlings Jackson. The Croonian Lectures for 1890, will be given by Dr. Ferrier; those for 1891, by Prof. Burdon Sanderson. Dr. Macon, Master of the Rotunda Hospital, has been elected King's Professor of Midwifery in the University of Dublin. The medical schools of Dublin are about to amalgamate.

TOPICS OF THE WEEK.

THE FUNCTIONS OF PROTOPLASM.

The Croonian Lectures delivered during the present year by T. Lauder Brunton, M.D., before the Royal College of Physicians of London, are so eminently suggestive, and so replete with instruction, that they commend themselves not only to the reading, but to an exhaustive study, by all those who seek by means of physiological research explanation of the specific actions of remedies.

We quote from his third lecture, contained in the *British Medical Journal*, his observations, with reference to cell movement, cell respiration, and its relations to temperatures :

1. MOVEMENTS OF CELLS.—On observing isolated cells, such as the leucocytes of the blood, we can see that they are endowed with life, and will continue to move about on the stage of the microscope as independent organisms for a considerable time after the death of the animal from which they have been taken. Their movements are of two kinds, viz., one of simple contraction or extension of the protoplasm in various directions, while the cell remains in its place, and secondly, movements from place to place. I call your attention specially to those kinds of movement because both are probably of practical importance. The movements from place to place enable the leucocytes, as was first observed by Addison and then by Waller, to move out of the blood-vessels. The importance of this diapedesis, and of the further movements of the leucocyte amongst the cells of the tissues has been clearly demonstrated by Cohnheim and his followers ; but it seems probable that movement of the protoplasm in a cell while it remains *in situ* may be no less important.

2. RESPIRATION IN CELLS.—Kühne showed that isolated cells have the power of absorbing oxygen, by placing them under the microscope in water containing a little oxy-hæmoglobin. After a while they absorbed the oxygen from the hæmoglobin and reduced it. This reduction was discovered by looking at the solution with the microspectroscope, and noticing that it gave the band of reduced hæmoglobin instead of oxy-hæmoglobin as at first. The experiments of Ludwig and his scholars upon circulation through single organs or parts of the body isolated from the rest, and also those of Pflüger and his school upon the gases of the blood, have shown that oxidation and reduction occur in the tissues, but that the amount of each is not always the same, oxidation being sometimes predominant, and, at other times, reduction. Similar results have been obtained in living men by Pettenkofer and Voit. It was found by Harley that the absorption of oxygen and the elimination of carbonic acid by blood could be altered by admixture with various poisons. The power of quinine to lessen such processes was not only discovered by Binz, but brought by him into close relationship with the antipyretic power of the drug, and his researches formed a starting point for numerous investigations into the action of antipyretics generally.

In the admirable lectures which he gave before this

college last year, Dr. MacAlister gave such a complete account of the pathology of fever that I need not do more here than just recapitulate one or two of his chief conclusions.

Increased temperature may depend upon (a) lessened loss of heat by radiation or conduction, or (b) increased formation of heat by greater oxidation in the tissues, and especially in the glands and muscles. The oxidation by which heat is formed in these tissues is regulated by two or three nerve centres within the cranium. Antipyretics, he informed us, appear to lessen oxidation within the body and diminish the formation of heat by stimulating these centres, but he did not discuss the mode in which stimulation of the thermal centres alters the processes of respiration in the tissues, and thus lessens oxidation. This point of the question I propose to take up now, but before I can deal with the action of drugs as antipyretics I must ask your attention for a short time to some observations which have been made upon the respiratory functions of the cell.

3. OXIDATION AND REDUCTION.—From such experiments as those I have already mentioned, it has been known for some time that cells possess the power of taking oxygen from the air, from liquids containing it in solution, or from substances like hæmoglobin, which contain it in a loose state of combination. To this power of removing oxygen from other things the term "reducing" is given, while that of "oxidizing" is applied to the power of giving off oxygen to other substances.

Double Action of Hæmoglobin.—Some bodies, like hæmoglobin, possess both powers to a large extent. A solution of hæmoglobin mixed with air absorbs the oxygen from it, and thus has a reducing action, but if this oxidized hæmoglobin be then mixed with some ferrous sulphate it gives up the oxygen to it, oxidizes it, and forms ferric sulphate. It thus loses its oxygen and becomes reduced, the ferrous sulphate having acted upon it as a reducing agent.

Comparative Degrees of Affinity for Oxygen.—Substances differ in the degree of affinity which they have for oxygen, it being greater in some and less in others. Thus it happens that we might draw up a scale containing a number of bodies each of which would have a greater affinity for oxygen than the one above and less than the one below it. Each one would therefore abstract oxygen from the one above it, and act as a reducing agent towards it, while it would give up oxygen to the one below it, and thus act as an oxidizing agent.—*British Medical Journal*, June 29, 1889.

ANTISEPTIC MIDWIFERY.

In the August number of the *American Journal of Medical Sciences*, DR. HENRY J. GARRIGUES, of the New York Maternity Hospital makes special reference to the use of corrosive sublimate and creolin in obstetrical practice.

As the result of extended research he is able to cite twenty-two cases in which the use of corrosive sublimate has been attended with fatal results. In the majority of these cases he is confident that a too strong solution was used. He recommends that the solution be made 1:5000

as yielding the necessary antiseptic action, and less dangerous to the patient.

He speaks secondly of creolin as one of the latest antiseptics, and highly recommends it for thorough trial. It is obtained from English coal, and has the color, consistency and smell of coal tar, and up to 12 per cent. it forms an emulsion with water.

It is rated as second only to bichloride of mercury in antiseptic value, a 3 per cent. solution being fatal to germs in one minute. A 3 per cent. solution causes no unpleasant sensation upon the skin, but a 5 per cent. emulsion causes a feeling of smarting. Solutions of $\frac{1}{2}$ to 2 per cent. are well borne upon mucous surfaces. Applied in this strength to indolent ulcers it cleanses the wounds, stimulates granulation and healing, often when all other substances had failed. It leaves the surface to which it is applied soft and pliable; and a point of special importance in its use lies in the fact that it is nearly if not entirely innocuous. The following are his conclusions as to the use of these two articles:

1. The solution of bichloride of mercury used for vaginal and intra-uterine injections ought not to be stronger than 1:5000.

2. No more than 1½ quarts should be used.

3. The fluid should be removed from the uterus and the vagina.

4. No injections should be used in normal cases after the birth of the child.

5. Intra-uterine injections should not be given oftener than once or twice in twenty-four hours, vaginal every three hours.

6. The symptoms and signs of absorption should be constantly looked for and the use of bichloride discontinued at their first appearance.

7. The symptoms and signs of abortion should be carefully looked for and the use of bichloride discontinued at their first appearance.

8. It is safest to abstain from the mercurial injections altogether until experience shows that the corrosive sublimate gives better results than any other antiseptic.

9. Corrosive sublimate should be used for disinfection of the outer surfaces of the patient, for the hands of doctors and nurses and for materials brought in contact with the patient.

10. Carbolic acid is perhaps as dangerous an injection as corrosive sublimate.

11. Other less effective germicides may occasionally answer a good purpose.

12. Creolin is an excellent antiseptic; little poisonous, a powerful hæmostatic, and makes all surfaces slippery—properties that recommend it especially in obstetrical practice.

ACUTE ARTICULAR RHEUMATISM.

In the treatment of this disease DR. H. LINDERBORN thinks that sodium diosalicylate No. II is destined to supplant the use of salicylate of soda. "The ditbosalicic acids Nos. I and II are two isomeric bodies, each of which consists of two molecules of salicylic acid linked together by two molecules of sulphur. No. II (sodium salt) is a greyish-white powder, very hygroscopic, and easily soluble

without residue in water. According to Hüppe, a 20 per cent. solution kills anthrax bacilli in forty-five minutes, in which time the ordinary salicylate has no perceptible effect; similarly with other bacteria. Four cases of polyarticular and one of the monoarticular rheumatism were treated, also one of gonitis gonorrhica complicated with iridochoroiditis; the dose was 0.2 gram (3 grains) morning and evening—oftener in the more severe cases. The slighter cases showed disappearance of joint-swelling, pain, and fever in two days, the more severe cases in six days. One case was a relapse after salicylate treatment; nausea and noises in the ears were complained of, severe sweating occurred only when 0.8 gram (12 grains) were taken *pro die*. The last mentioned of the above cases was from another hospital, and the patient left cured in ten days. The advantages of this drug over salicylate acid are: stronger action, therefore smaller doses; tolerance by the stomach (the insoluble dithiosalicic acid is precipitated from the sodium salt in an acid solution); and absence of unpleasant after-effects.—*British Medical Journal*.

GASTRIC MUCOUS MEMBRANE.

The power of reproduction with which the mucous membrane of the stomach is endowed seems wellnigh incredible. PROF. L. GRIFFINI and DR. G. VASALLE, after a series of experiments upon fifteen dogs, formulated the following conclusions:

1. The mucous membrane of the fundus of the stomach, removed in dogs, for a considerable extent and in its entire thickness is always reproduced, including the peptic glands.

2. The newly formed glands are developed from the new epithelial layer which in the beginning covers the wound. This epithelial layer itself is developed from the epithelium of the glands on the borders of the wound, thus demonstrating the possibility of the development of an epithelial layer in its totality from true glandular epithelium.

3. The pepsin cells of the newly formed tubular glands are developed in the beginning through a differentiation of the cells of the tubular glands themselves, and this formation originates in the bottom of the tubules, whence the cells are pushed upward.

4. The reproduction process of the peptic glands finds its exact prototype in the process of embryonic development.

5. The reproduction was quite rapid in all the animals, which were strong and healthy and placed amid favorable surroundings. In one case the development was tardy, owing to a considerable loss of tissue (6 cm. equals 2.36 in.) and an unsuitable diet.

6. Perforation of the wall of the stomach never followed removal of the mucous membrane, even though the muscular tunic had been seriously injured.—*Deutsch. Med. Zeitung*, May 9, 1889; *The Medical Bulletin*.

RENAL DIURETICS.

Dr. Germain Sée is studying another group of diuretics, which he calls "renal diuretics." They consist of caffeine and theobromine.

SOCIETY PROCEEDINGS.

New York Academy of Medicine.

SECTION ON ORTHOPÆDIC SURGERY.

Stated Meeting, March 15, 1889.

A. B. JUDSON, M.D., IN THE CHAIR.

CICATRICIAL CONTRACTION OF FINGERS.

DR. A. M. PHELPS presented a patient on whom he had operated four weeks ago for restoration of motion to the fingers, which had been flexed in the palm by a cicatrix in the wrist of eight years standing. He had freed each tendon from the cicatrificial tissue, and had secured healing by blood-clot, with the hope that new sheaths would be formed in the clot. The wound was dressed antiseptically, and the first dressing was changed at the end of three weeks. The prospect of recovery of motion was good.

DR. R. H. SAYRE said that Paget had long ago recognized the organization of blood-clot after subcutaneous tenotomy. The case presented by Dr. Phelps shows that advantage can be taken of it after open incision under antiseptics.

HYSTERICAL EQUINO-VARUS.

DR. N. M. SHAFFER presented a patient, a girl of 12 years, who had been affected for ten weeks with hysterical equino-varus and rhythmical movement of the left foot. The talipes was reduced manually, but the motions were persistent. There was inability to walk, the result of the disability of the quadriceps extensor group. Before coming under Dr. Shaffer's observation, plaster-of-Paris had been applied to the limb for several weeks, but without benefit.

DR. A. B. JUDSON thought that choreic elements were seen when the patient attempted to walk. He recalled a case of rhythmical myoclonus reported by Dr. Peckham in the *Archives of Medicine*, in 1883, in which the patient had been subjected to a great variety of treatment, and finally recovered after the hypodermic use of atropin.

DR. S. KETCH suggested treatment by hypnotism.

DR. R. H. SAYRE thought that the case illustrated the fact that abnormal muscular contraction can produce degrees of deformity as marked as those caused by bony distortion.

DR. L. W. HUBBARD thought the case allied to chorea, being the result of nerve irritation or exhaustion. He suggested absolute rest or recumbency for a long period, with efforts to improve the nutrition.

DR. A. S. HUNTER had treated with success a case of hysterical hip by the administration of ignatia amara. The use of this drug in a number of cases of this kind had led him to value it

highly when the disturbance was limited to groups of muscles only; but he thought it was of little value in the treatment of general choreic conditions.

DR. V. P. GIBNEY had had a favorable effect in a case of rotary spasm of the neck, from the fluid extract of gelsemium, given in five minim doses, and pushed almost to toxic effects.

DR. H. W. BERG said that the contractions in the case shown could not be due to nerve lesion, because it yielded so readily to manual replacement. Where there is irritation of motor nerves, as in spastic paralysis, it is extremely difficult to reduce the limb to a proper position. He suggested the ordinary treatment of chorea with electricity to make an impression on the mind rather than on the nerves.

The paper of the evening was read by DR. PHELPS, entitled

THE MANAGEMENT OF HIP-JOINT DISEASE FROM AN ANATOMICAL BASIS.

In regard to the pathology of hip disease, Dr. Phelps believes that it is a local tuberculous affection, due to accidental inoculation and not to a constitutional or strumous condition. Following Volkmann, Albert, and König, he believes that the inflammation, at first simple, becomes tubercular by inoculation, and then purulent. The irritation of the peripheral extremities of the nerves in or about the joint produces muscular spasm, which in turn distorts the joint by trauma, aided by the bacilli of tuberculosis.

In regard to treatment, he relies on mechanical treatment, believing that if we immobilize a joint and remove the intra-articular pressure, Nature will take care of the tuberculous material. His experiments on dogs had convinced him that immobilization of healthy joints does not produce ankylosis. Encouraging motion in an inflamed joint is a violation of the surgical law that an inflamed part requires rest. He believes that the muscular spasm, which is a most serious element of destruction, should be overcome by extension, and that while extension is necessary to secure immobilization, it is not sufficient of itself. He therefore resorts to a combination of extension and fixation; the extension always to be in a line corresponding to the axis of the neck of the femur.

Treatment, as a rule, should be begun in bed, extension being made in two directions, *i. e.*, toward the foot-board and laterally, the body and well leg being fixed to a long splint extending to the axilla. If the deformity does not yield to extension properly applied, the tissues at fault should be divided subcutaneously, or by open incision. Abscesses are to be incised through their entire length, and thoroughly scooped out and washed, strict antiseptic precautions being observed. Distension of the capsule should be re-

lieved by aspiration or incision; then traction will not produce pain.

He exhibited a patient in a portable bed, which is an ingenious substitute for the wire cuirass, made with a board cut in an outline of the body, and plaster-of-Paris. The child is laid on the board, and then the whole enveloped with plaster-of-Paris bandages from the foot to the axilla. The plaster is then cut away in front, the interior comfortably padded, and the patient held in place by lacings or bandages. Extension and fixation in bed are to be continued until the active symptoms and the deformity have entirely disappeared, and the spasm of the muscles is no longer present. Adults are then given crutches, and a portable splint which has a perineal crutch, extension by adhesive plaster, an abduction bar, and an upper (thoracic) ring to prevent flexion and extension at the hip. Children, after treatment in bed, are to have the portable bed, and then the portable splint, with or without the high shoe and crutches.

DR. J. RIDLON was much pleased to hear the author of the paper take the ground that hip cases should be cured without deformity. He recalled a case of a patient in which the muscular spasm had been relieved by pinching the muscle. The child was very thin, and it was found that when the adductors were separated from the other muscles, and the belly of the muscle was pinched without any attempt at fixation, there was as much relief as could have been afforded by lateral traction.

DR. SHAFFER said that the paper had suggested to him the importance of separating in our minds the disease from the deformity. It is a question how far we are justified in meddling with the deformity, which is simply an expression, or so to speak, a symptom of the disease. In his experience, attempts at speedy reduction of the deformity had been followed by disastrous results. Nature gives a very positive indication in the acquired position of the thigh—that in which the immobilization of Nature reaches its maximum, and the diseased parts receive the greatest relief from reflex muscular spasm. If we forcibly interfere with this effort on the part of Nature, we inflict a distinct traumatism.

On the threshold of treatment, the important question is, not whether traction is to be made in the line of the shaft or the neck, but how to secure an artificial immobilization in the position nature assumes as the one that affords the most protection to the inflamed parts. He believed that if the joints were protected from traumatism, in other words, if traumatic contact of the inflamed joint surfaces is removed, and this can readily be done by the use of portative apparatus without entailing immobilization of the entire body from the head down, the joint is placed in the best known local condition.

The portative traction treatment is compatible with fresh air, sunlight, and moderate exercise, which are the best means of combating the tubercular disease, and the tubercular diathesis. More lives have been saved, and better results have been thus secured, than by any other method which has been thoroughly tested.

DR. R. H. SAYRE agreed with Dr. Shaffer as to the importance of maintaining the general health, and the inadvisability of general immobilization of the body, if the diseased joint could be controlled without it. He thought that complete immobilization of the hip-joint in young children was very difficult to secure; and that the movement that stopped short of producing muscular spasm and pain, was not harmful. For poor children particularly, he thought the portable bed was an admirable contrivance.

The relief obtained in some cases by pinching the muscle could be explained on the supposition that it stopped the reflex action of the muscle. It is known that firm constriction of the belly of a muscle will, in certain cases, abolish spasm.

DR. CHAS. L. SCUDDER, of Boston, advocated a more frequent resort to the results of experiment on the cadaver. He recalled Dr. Bradford's experiments made in 1880, in which it was found that in an adult a force of one hundred pounds was not sufficient to separate the head of the femur from the socket; while in the shallow and not yet completely ossified acetabulum of a young child, a moderate force caused separation, and still less force was required in the foetus. Dr. Scudder believed that in hip disease of children, a tractive force of from three to five pounds would separate the joint surfaces as was illustrated at the Children's Hospital in Boston, in the case of a young boy who had hip disease and night cries. The joint cavity was opened and a small quantity of pus evacuated. While the boy was under ether, it was found that traction made with the hand separated the joint surfaces to such an extent that the finger could be placed between the head and the acetabulum.

DR. HUBBARD thought that no one at the present time held the opinion that ankylosis is caused by immobilizing the joint affected with chronic inflammation. He had found it difficult to get ankylosis in cases where it was desirable, as in disease of the knee. The first object is to give rest to joint, which is best done by traction; not to separate the surfaces, but to overcome articular pressure which leads to muscular spasm. He believed the long hip splint gave sufficient immobilization for all practical purposes. It is more easily managed than the portable bed of Dr. Phelps, which from neglect would be likely to cause excoriations. As the disease seems to be a struggle between the tubercle bacilli and the vitality of the organism, he thought it especially important to place the system in the best possible

condition to resist attack. He had rarely seen constitutional disturbance from abscesses which had been let alone, although in exceptional cases acute and painful conditions are certainly greatly relieved by surgical interference.

DR. JUDSON commended the title of the paper. It was an admission that hip disease is not to be cured by treatment, but so managed that the almost inevitable recovery by natural processes should be with the minimum of disability and deformity. He thought that more emphasis should be placed on the importance of protecting the joint from the traumatism of standing and walking, as is done by the use of Hutchison's extra long crutches and high sole on the well foot. But in every case there are long periods of exemption from pain, when this simple apparatus will be discarded. The ischiatic or perineal crutch of the hip splint, however, cannot be willfully discarded; and when it is seen that the rack and pinion not only furnish traction, but also a convenient means of adjusting the length of the upright, the hip-splint appears to come very near perfection as an instrument for the management of hip disease. He had never recognized either the trauma said to be caused by reflex muscular contraction or the alleged mechanical counter-action of the muscle by traction. He believed, and had always held, that the hip-splint mitigates reflex muscular contraction by allaying the inflammation which gives rise to it. This it does by arrest of motion and prevention of pressure; motion being arrested by traction brought about by the use of the key, and pressure being averted by the perineal or ischiatic crutch, which makes the limb a pendent member. As the inflammation is resolved the reflex muscular contraction ceases.

The last annual report of one of our orthopaedic institutions contains a table, from which it appears that there have been under treatment 371 cases of disease in the hip; 6 in the shoulder; 85 in the knee; 3 in the elbow; 27 in the ankle; and 5 in the wrist; an aggregate of 483 in the lower, and 14 in the upper extremity. Shall we draw the inference that the incipient osteitic focus is found only or chiefly in the cancellous tissue of the lower extremity, or that a focus in the upper extremity more readily undergoes resolution by reason of its comparative exemption from violence? If the latter view is correct, it follows that the limb is to be made a pendent member by the persistent use of the axillary or ischiatic crutch at the earliest recognition of the disease. In some cases, an earlier diagnosis may be facilitated by the following simple method:

Let the patient sit on a table with the legs hanging and the knees separated; in this position, swinging the leg laterally is possible only with rotation of the femur; and if one leg oscillates in a less arc than the other, it induces or con-

firms a suspicion of the integrity of the joint. He did not believe in treating abscesses and sinuses excepting indirectly through the general and local management of the bone disease in which they have their origin.

DR. GIBNEY was in favor of securing absolute immobilization, but sometimes he would rather have less perfect immobilization, if by so doing he could secure a change of air and climate, with the consequent improvement in the general nutrition.

Ordinary hip disease is managed satisfactorily by the portable traction splint, with or without the rack and pinion; and he had been agreeably surprised with the facility with which these patients ran around in the tenement houses. They come to his clinic only every three or four weeks for adjustment of the apparatus; and, during these intervals engage in the most active sports; they certainly do not lie in bed in dark rooms and die of pyæmia. It is unsafe to put these children in an appliance like a cuirass or the portable bed, unless one is certain of being able to see and attend to them at short intervals. It had been his lot to see cases in which he had been unable at times to obtain proper co-operation on the part of the patient's family. He had often seen abscesses burrowing up to the spinal column and down to the knee; and such cases seemed to baffle even attempts at surgical interference. We must be guided a good deal by circumstances, and if we can protect the hips from trauma and give the patient the benefit of outdoor exercise, abscesses will generally be insignificant.

He believed in correcting the deformity speedily, if necessary by dividing tendons and bone under an anæsthetic; for by so doing, we save much time and lose nothing. In regard to aspirating the joint over-distended with fluid, it was almost impossible to diagnose an over-distended hip-joint. The position of the limb does not depend on the quantity of fluid in the joint, but is due to reflex spasm, and the efforts made by the child and nature to secure fixation.

DR. J. H. GIRDNER described an experiment on the cadaver in which great force was applied without separating the surfaces of the hip-joint. He also cited a case in which it had been necessary to keep the hand applied to the face for nine weeks in the course of a plastic operation on the nose. At the end of this time, there was no limitation in the motions of the elbow and wrist.

DR. KETCH believed that hip disease is so often characterized by exacerbations that all attempts at a division into stages are of no practical value. He thought that the hip-splint could be often of use for the reduction of deformities even in those periods when the patient is confined to his bed. In general, he believed it was a great mistake to make use of any apparatus which can

be entirely left to the care of the patient or family for long periods. The explanation of the relief of pain by compression of muscles was to be found in an involuntary action on the part of the patient which secures fixation and traction at the same time.

DR. BERG, speaking from the standpoint of the general practitioner, who frequently saw children in the very beginning of hip disease, related the histories of three cases which had presented the symptoms of early hip-joint disease, and yet recovered perfectly after rest in bed for a few weeks. He now insisted on all such patients remaining in bed for several weeks before commencing any other treatment.

DR. PHELPS, in closing the discussion, said that many cases in tenement houses, whether treated by the long traction splint or by the portable bed, are deplorably neglected; but this does not argue against the use of either apparatus; it simply illustrated one of the difficulties with which all practitioners have to contend. He valued the portable bed because he desired immobilization of the affected joint, and this could not be obtained with splints having joints in them, and not including the trunk. He could relieve his patients better in bed during the period of deformity, and so adopted this method of treatment. He had seen patients in England who had been in bed for several years, and were still in excellent health. He did not, however, advocate prolonged bed treatment. Believing that the cases in question are inoculations of the bacillus tuberculosis on a previously inflamed surface, and not instances of constitutional tuberculosis, he explained the frequency of tubercular joint diseases in the lower extremity, by the statement that the joints of the lower extremities being more subjected to traumatic inflammation, furnish good ground in which the bacillus of tuberculosis could more readily reproduce itself. He had presented his honest convictions, and hoped to report his cases later in such a way that others could disprove his statements, or he could substantiate his views.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

The Nature of Arrow Poison—The Proposed Inquiry into the Management of Metropolitan Hospitals—The Action of Antipyrin—Tubercular Abscess of the Breast—The Aversion of some Animals to Saccharin—Miscellaneous Items.

Some of our medical journals are discussing the nature of the arrow poison which proved fatal to several of H. Stanley's followers during their mem-

orable journey from the Congo to Lake Nyanza. Hitherto it has been asserted, with very little evidence in many cases, that all the arrow poisons of savages have been extracted from vegetable substances. But according to Mr. Stanley's recent experience ants are the source of the poison. Five members of the expedition were hit by these weapons and four black men died very shortly afterwards, their sufferings having been intense. The fifth man hit was a white man, and he had a very narrow escape. The poison of the arrow which hit him had become dry and so he did not experience its full effects. It was afterwards found that the poison is manufactured from the dried bodies of red ants, which are ground to powder, cooked in palm oil, and smeared over the wooden points of the arrows. Some think that this poison must consist of formic acid. Others argue that some kind of ptomaine or animal alkaloid is thus obtained from the dead ants; but as these insects are dried and pulverized and afterwards cooked in oil, it is difficult to see how any ptomaine could be formed, for these animal alkaloids are the product of putrefaction, and it is not stated that the ants are allowed to putrefy. Hence it is not improbable, as *The Lancet* was the first to suggest, that the terrible poison of these arrows is formic acid or some organic derivative of that acid, more or less allied to prussic acid.

The petition for an inquiry into the management and organization of metropolitan hospitals has been energetically taken up by a very large number of leading physicians and surgeons and others who have special means of understanding what is wanted. More than 450 medical men have signed the petition, the great majority of whom are professors, lecturers, physicians and surgeons actually connected with hospital work. There is really most excellent reason to believe that if our London hospitals and dispensaries were only organized properly there would be no need for the constant appeals for public aid in the form of hospital shows, bazaars and other wasteful means of raising funds. The petition draws special attention to the glaring defects in our present lack of system. Out-patient departments are generally gorged with a crowd of people suffering from trivial complaints. Many of the applicants belong to classes for which charity is quite unnecessary. Another great administrative flaw is the total absence of any clear and definite division of labor between voluntary hospitals and dispensaries and those provided under the Poor Law. A scheme might be devised which would create special relations between neighboring hospitals and dispensaries, grouping them together, and providing means for the transference of cases from one to the other. But supposing these points to be satisfactorily settled, there will still remain the most difficult and delicate task of all in dealing with the sporadic establishment of unnecessary

hospitals. It is absurd to allow the waste of money which takes place every year by the foundation of new special hospitals almost under the shadow of great institutions in which whole wards are lying idle for want of funds. None of these difficulties are easy to deal with, and there can be no doubt that a well chosen select committee will be able to clear up much that is obscure and suggest the outline of a better order of things.

Dr. C. R. Illingworth has published the following important suggestion: He says antipyrin has been lauded as a hæmostatic. It is his opinion that as such it acts by preventing the formation of fibrin so thoroughly and effectually that there is less resistance to the flow through capillary blood-vessels in the vicinity than into the atmosphere, and more attraction. This power of antipyrin and its allies, he suggests, should prove serviceable in the treatment of sanguineous apoplexy, reducing the lesion to a minimum, and rendering complete recovery possible in many cases if taken early enough.

An important paper was recently read by Mr. Shattock on "Tubercular Abscess of the Breast." In the course of the paper it was stated that in the cow "tubercle of the udder" was a well known disease, so much so that on the Continent its hygienic importance was generally and practically recognized. Dr. Hamilton, a distinguished Aberdeen professor, has expressed the opinion that tuberculous milk from cows may often be the cause of what is popularly known as "consumption of the bowels." He cites a case of a perfectly healthy child, born of equally healthy parents, which was given to a wet nurse to be suckled. The woman was tubercular and the child very quickly contracted meningitis and died. The nurse's milk, on examination, was found to contain the bacilli of tubercle. Both Mr. Shattock and Dr. Hamilton have been impressing upon the public the necessity for always having milk cooked before it is used. It is suggested that the addition of a little sugar to the milk when boiling gives it quite a new flavor, and makes it more palatable than uncooked milk. For those who do not like what is sweet, a pinch of salt may be put in, and that again produces a substance having a totally different taste from plain boiled milk.

It has been discovered that animals such as dogs and cats have a curious aversion to saccharin. In some experiments recently neither carresses nor threats could induce them to eat bread on which only a very small portion of saccharin had been strewn. Water sweetened with small quantities of saccharin, which was poured down their throats was instantly vomited by them. In another case a very small quantity of saccharin was mixed with the food of three cats which they only received once a day. In each case they left it absolutely untouched. In spite of their being

very hungry, as was quite evident from their cries and movements, they did not meddle with the food during four hours. After this food free from saccharin was placed before them, which they quickly devoured, after they had sniffed it some time. It is considered that these experiments prove saccharin to have a peculiar odor which is easily perceived by the animals mentioned, but does not affect the human being.

The Bradshaw Lecture will be given this year by Dr. Norman Moore, of St. Bartholomew's Hospital. The subject chosen is "The Distribution and Duration of Visceral New Growths."

Surgeon Parry, of the Indian Medical Department, says he saw the jet black hair of a rebel Sepoy turn grey in half an hour, while he was under examination and half mad with fear, and he also relates the case of a gentleman who left home on his wedding tour with dark hair. When he came back a month later his hair, his beard, and even his eyebrows, had become snow-white.

A new clinical thermometer has appeared constructed with a layer of ruby red or other colored glass behind the bore, backed by a layer of opaque enamel. By these simple means the contents of the bore, as well as the divisions on the glass, are more readily made visible.

The work on Diseases of the Lungs, which occupied the late Dr. Wilson Fox during many years, is now in the press and will shortly appear. It presents the thorough method which always characterized the writings of this author. The editor, Dr. Sidney Copeland, was one of Dr. Fox's pupils. It will be in the hands of the public during the autumn.

A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The New Mausoleum Plan for the Disposal of the Dead—Dr. John M. Peacocke and Dr. A. N. Bell discuss the subject—Executions by Electricity—Dr. Wm. A. Hammond and the Brown-Séquard Elixir.

Of late the new mausoleum plan of disposal of the dead has attracted considerable attention in this city. The project seems likely to meet with much favor both from sanitarians and the public at large, and a company, in which many clergymen and physicians are interested, has now been organized for the purpose of erecting suitable buildings in the leading cities of the country. While the objections to the prevalent mode of disposal of the dead are generally recognized, cremation meets with much opposition, and it is believed that this new sanitary system will be widely adopted as a substitute for burial.

The buildings, each of which will contain from

ten to forty thousand sepulchral spaces, will be constructed, in the most substantial and durable manner, of concrete prepared from the best Portland cement, sand and broken stone. Concrete is the basis, the corner-stone of the new system, and without concrete it would not be practicable. The sepulchral spaces will be constructed with conduits conveying fresh dry air into the casket, whence it is carried by forced drafts to a central furnace in the sub-cellar. To this furnace the gases and vaporized fluids of the body are thus borne, and there consumed; so that the escape into the atmosphere of any noxious matter is perfectly prevented. There are left behind the mineral and solid parts of the body, in a properly dessicated condition, with the form and features intact, and wholly inoffensive to sight or smell. The tissues become cellular and sponge-like as the moisture is extracted, and while the weight of the subject is reduced two-thirds at least, there is no marked emaciation. The process was first thoroughly tested under the observation of the late Dr. A. V. P. Garnett, of Washington, who declared that the principle of the new mausoleum was one of scientific accuracy reduced to a practical fact. More recently the experiments have been conducted in this city under the supervision of Drs. C. I. Pardee and Rudolph St. Witthaus, of the Medical Department of the University of New York.

The mausoleum buildings will be of handsome architecture, with granite facings, and the roof constructed of glass and iron. The interior plan will resemble that of a well-appointed library, with a main corridor and diverging halls leading to the different sections. The sepulchres of solid concrete, four inches thick, seamless and jointless, will be arranged in tiers of six upon either side of the hallways, and the opening into each will be provided with two doors; the inner one of plate glass, hermetically sealed, and the outer one of metal or stone, decorated according to taste. Family vaults will be arranged in separate compartments of various sizes, and each mausoleum will have a beautiful chapel. There will be no possibility of stealing the dead, and the buildings will be absolutely fire-proof.

In an elaborate paper on "The Disposal of the Dead," read a short time since before the Medical Society of King's County, Dr. John M. Peacocke expressed himself as follows in regard to the proposed new method: "The dessicating process has many commendable features. It complies with all the sanitary requirements, and meets the medico-legal demand that the evidence of crime shall not be destroyed. The rapid abstraction of moisture by this method will do away with the factors in the production of ptomaines which might vitiate the result of a chemico-legal examination. This system is devoid of everything that can shock sensitive minds or offend refined tastes.

It does not conflict with the widespread and deep-seated reverence felt for the remains of the dead. The mass of mankind looks not only with aversion but with feelings akin to horror on any process that aims at immediate destruction of the body. This may be all sentiment, nevertheless no amount of specious reasoning can readily or easily overcome the tender and universal deference for the beloved departed, for it is woven into the very warp and woof of the human heart, and has the religion, the tradition, and the custom of centuries associated with it. . . . It is evident that the introduction of any change in the present method of disposal of the dead will naturally encounter suspicion, criticism and opposition; except in the case of the method of desiccation, which seems to have been received, as far as presented, with marked favor."

In the discussion of the paper Dr. A. N. Bell, editor of *The Sanitarian*, stated that the single sentiment to which he wished to give utterance was, the necessity for so disposing of the dead as not to endanger the life of the living. In the course of his remarks he said: "There is a proposition now on foot to build grand mausoleums in connection with or independent of the cemeteries, as the case may be, where the sentiments of certain people can be gratified, if they do not wish to bury their dead, or are prohibited from, as they certainly should be in many cases, from burying them so as to endanger the living, and are unwilling to have them cremated. I mention this as only one of the means of disposing of the dead without danger to the living, because it overcomes the objection which touches the sentimental emotions of individuals who think cremation lacking in sacredness, and too rapidly destructive. . . . But the new mausoleum process fully meets this sentiment, while it also overcomes the medico-legal objection urged against cremation, and, like it, effectually disposes of the dead without danger to the living."

In the case of the murderer Kemmler, the first criminal condemned to execution by electricity in accordance with the new law relating to capital punishment, the counsel for the prisoner some time since obtained a stay of proceedings. They claimed that the law was unconstitutional, on the ground that death by electricity is a "cruel and unusual" form of punishment, and for more than a month expert testimony has been taken before a referee in regard to the effects of electricity upon the animal economy. There can be little doubt, however, that the chief incentive for the proceedings to test the constitutionality of the law is the objection of the electric light company whose apparatus has been solicited for the execution of criminals to having it employed for this purpose, lest those using it for other purposes should get the impression that the current is dangerous to human life. The matter has in reality resolved

itself into an inquiry whether, upon the whole, the Legislature was justified in passing the law in question; and it is certainly a fact that if this appeal is successful, capital punishment will have been abolished, or at least suspended, in the State of New York, since there is no warrant in the law as it now stands for putting a man to death in pursuance of a judicial process by any other means than the application of electricity.

Still, the testimony obtained as to the efficiency of the alternating electric current for the desired purpose has been so conclusive that it seems altogether probable that this attempt to prevent the execution of the law will fail. Among the witnesses examined was Dr. A. D. Rockwell, the specialist in electro-therapeutics and nervous diseases, who assisted in the experiments made upon animals at the Edison laboratory before the law was passed by the Legislature, and he unhesitatingly testified that, from his knowledge of the subject and the experiments he had witnessed, he believed that an electric current can be artificially generated which will kill a man instantly and painlessly in every case where it is scientifically applied; also that the electrodes can be so placed upon a criminal in the apparatus proposed to be used in electrical executions that there will be no probability of his being burned. He expressed his conviction that an alternating current of 1,000 volts would always destroy life, and in this opinion he was confirmed by Edison, the electrician. In regard to an alternating current of 1,500 volts, such as it is proposed to employ in executions, Dr. Rockwell stated that he had no doubt whatever that it would inevitably kill. Such a current, he said, would of necessity produce a rupture of the muscular tissues and immediately stop the action of the heart; causing a paralysis of the nerve centres.

Mr. Harold P. Brown, the electrical expert who has contracted to furnish to the State the apparatus to be used in executions, has recently arrived at Auburn, where the prisoner Kemmler is confined, and in the presence of Dr. Carlos F. MacDonald, late Superintendent of the State Asylum for Insane Criminals, and others, he will make a series of experiments with the identical apparatus which it is proposed to use in the case of Kemmler. Mr. Brown states that he has a list of no less than ninety individuals who have been killed by contact with electric wires. Twenty-seven of these were killed by the alternating current and fifteen by the Westinghouse dynamo, which is to be used in the execution.

Dr. Wm. A. Hammond, who like most others was at first disposed to pooh-pooh Brown-Séquard's alleged discovery of the rejuvenating power of the testicle, now announces that the results of a number of experiments which he has himself made are such as apparently to confirm the correctness of Brown-Séquard's assertions.

In the experiments he used the testes of freshly killed lambs, in preference to the rabbit or guinea pig, employed in France; great care being taken to thoroughly filter the solution employed in the injections. He began his experiments first on himself, to make sure that the method was not dangerous to the patient. Since then he has experimented on several old men without their being aware of what was being done to them, and in the case of one of them, he states that the result was quite remarkable. He was about 60 years of age and had his arm so nearly paralyzed with rheumatism that for nearly a year he had not been able to raise his hand to his head; while soon after one injection he could move it in any direction and almost as vigorously as he had ever done. Of course, Dr. Hammond does not claim any conclusive results with the limited number of experiments thus far made, but he says he feels justified in proceeding further with the investigation.

P. B. P.

Andi Alteram Partem.

To the Editor:—In an editorial in the last issue of *THE JOURNAL* which I have read with a great deal of interest, you attempt to draw a comparison between the results of the medical and the surgical treatment of acute intestinal obstruction, and you claim that whereas 30 per cent. recover after medical treatment, 68.9 per cent. succumb to surgical treatment. If you will permit me to venture an opinion upon this subject, I would suggest that you are not stating the proposition fairly. You no doubt are aware that only those patients are subjected to surgical treatment who, in spite of the old and classical opium treatment, continue to grow worse; and that operative interference is, as a rule, unfortunately delayed till the patient is greatly exhausted and his physician and friends realize that death is inevitable without the same. As in cases of intestinal obstruction, therefore, medical treatment is adopted at the very outset, and surgical treatment only resorted to after medical treatment has failed, a comparison between the results is scarcely feasible. And yet the statistics you adduce prove that, even under prevailing circumstances, the results after surgical treatment are slightly better than those of medical treatment. How much better they will be in future, when we have learned the important lesson that in order to prove successful, grave operations have to be undertaken in "good season," can only be surmised.

I have noticed with a great deal of regret that in recent editorials of *THE JOURNAL* an effort is made to discourage grave operations, particularly in obscure abdominal affections; for every unbiased physician will readily admit that especially in abdominal affections operative interference has been crowned with marvelous success, and that

thousands of lives are now saved that without such interference would be doomed to an early death. And I am persuaded that even to-day ten lives are lost for the want of timely and early surgical interference to every one sacrificed by an unnecessary and premature operation. Within the last year I have seen two patients with strangulated herniæ die; in both cases the incarcerated intestine had sloughed, and yet the attending physicians seemed to think that they had done their duty to their patients by feeding them on opium and letting them die.

Every practitioner knows how much a patient dreads the knife and how difficult it is, as a rule, to obtain his consent to an operation which really offers the only chance for his recovery. Every one knows, too, how often even physicians discourage operations, even in cases where they are imperatively demanded, for no other reason than that they are not prepared or unable to perform the same.

It would seem that for these reasons it is of questionable prudence for any prominent medical journal to deprecate any operation which already has saved many lives, and which will in the future, as the technique of the same becomes more and more improved, undoubtedly show a still larger percentage of recoveries.

H. H. VINKE, M.D.

St. Charles, Mo., August 16, 1889.

NECROLOGY.

Dr. James L. Cabell.

Dr. James L. Cabell, who died at Overton, Va., on the 13th inst., was one of the early members of, and a frequent contributor to the reports of the American Medical Association. He was for more than fifty years identified with the University of Virginia, in its department of medicine. He was an alumnus of that University in 1833, in arts. He obtained his medical degree at the University of Maryland in 1834. He studied abroad and at home, for three years, preparing himself for the professorship at Charlottesville, which came to him in 1837, when he was only 24 years of age. His first chair was that of anatomy and surgery. He continued with the University until the end of the session recently closed, when he retired to make room for his former pupil, Dr. Barringer, his health rendering the step expedient. He was prominent in his State Medical Society, and in the American Public Health Association, becoming the presiding officer of each in 1876 and in 1878, respectively. He was Chairman of the Health Conference at Washington, during the epidemic of yellow fever at Memphis. His eminence in the field of

public hygiene led to his appointment as president of the National Board of Health, a position filled by him for several years with great advantage to the public service and to the cause of sanitary science in this country. He was the recipient of many honors and a member of many important societies, nearly all of which profited, from time to time, by the contributions of his learning and ripe judgment. He was in his seventy-sixth year at the time of his decease.

Dr. Alexander Mott.

The readers of THE JOURNAL will regret to learn of the death of Dr. Mott, on the 12th of the present month. He died at Yonkers, of pneumonia, after a sickness of two days. Dr. Mott was a well-known member of a well-known family. He was a son of Valentine Mott, the world-renowned surgeon. Alexander Mott was born in New York in 1826. Few surgeons were as well known in New York up to 1860, when he organized the medical corps of the militia work. He was commissioned a surgeon in the U. S. Volunteers in 1862, with the rank of Major. He founded the United States Army General Hospital in New York, and about the end of 1864 he became medical inspector of the department of Virginia, and was attached to General E. O. C. Ord's staff. Dr. Mott was at the memorable conference between General Grant and General Lee when the terms of surrender were arranged, and, with the brevet of Colonel, was mustered out of the service on July 17, 1865. He then resumed practice in New York, and helped to found Bellevue Medical College, where he was Professor of Surgical Anatomy and remained until 1872. He leaves a son, Dr. Valentine Mott, who is also well known in the medical profession.

MISCELLANY.

HYGIENE.—It is the province of hygiene to seek out and determine the causes of disease, and to formulate rules for their prevention and removal. It may thus be called also preventive medicine. The progress of hygiene, such as it was, rested for many ages upon an empirical basis; and indeed, to a large extent, this is still the case. The subject has, however, in later times at least, been studied to considerable advantage, though much remains to be done.

Two centuries ago the mortality of London was 80 per 1,000; at the present day it is under 23. A century ago ships could barely keep the sea for scurvy, while jails and hospitals were in many cases the hotbeds of fatal diseases. Now, these conditions are rectified, or at least the means of rectifying them are known. Thirty years ago the English troops at home died at the rate of 20 per 1,000, now their death-rate is less than one-half of this. A knowledge of the causes and modes of propagation of disease being necessary in order to provide rules for its prevention, it is obvious that hygiene must be largely dependent upon the advances made in pathology and

etiology; hence the impossibility of any yearly marked progress in former times, by reason of the imperfection of the collateral sciences, and the want of the appliances more recently made available for inquiries of such difficult and recondite character.

Within this century, however, and especially within the last forty or fifty years, it has been possible to follow out the subject on a more strictly scientific basis, and so to lay a foundation at last on which to build a structure which may one day entitle hygiene to a place among the more exact sciences.—*Plumber and Gasfitters' Review*.

NEW YORK STATE MEDICAL ASSOCIATION (FIFTH DISTRICT BRANCH).—The seventh special meeting of the Fifth District Branch will be held in the Fowler House, Port Jervis, at 2 P.M., on Tuesday, August 27. The following scientific papers will be presented: "Some Observations on the Use of Concentrated Lactic Acid," by W. B. Eager, M.D.; "The Treatment of Typhoid Fever, with special reference to the Cold Water Method," by J. H. Hunt, M.D.; "A Case of Empyema," by H. B. Swartwout, M.D.

For those who may desire to remain over night, a drive to Milford, Pa., to visit the Sawkill Falls (with supper at the Fauchere House) has been arranged for. Friends of the Fellows—both medical and lay—are cordially invited to participate in this excursion. Ladies are especially invited.

The total expenses for the whole trip, which includes the railroad return ticket between New York and Port Jervis, dinner at the Fowler House, drive to Milford and return, supper at Fauchere's and accommodations over night at Port Jervis, will not exceed \$6.50 for each person. If there is a large attendance this amount will be considerably reduced.

THE LATEST arrivals of new remedies in this market include wrightine, frequently mentioned in journals of late, condurangin, kawain, from Kava Kava, and pyrotechin, used by photographers.—*Notes on New Remedies*.

DR. N. SENN has been proposed for honorary membership in the National Academy of Medicine of Mexico.

THE UNITED STATES HAY FEVER ASSOCIATION will hold its sixteenth annual meeting on the 27th inst., at Bethlehem, N. H.

SULFONAL.—Dr. T. Lauder Brunton says, in one of the Croonian Lectures, that sulfonal appears to be one of the most effective of all the newly introduced hypnotics, and although it does not, like morphine, compel sleep, it induces sleep in a pleasant manner and has few disagreeable effects and little or no danger. Sulfonal has recently declined in price.

AN INFANTS' SUMMER HOSPITAL has been established by the citizens of Rochester, N. Y., at Charlotte, on Lake Ontario. Dr. E. M. Moore is President of the Association, and Dr. George W. Goler is attending physician. Any child suffering from intestinal trouble is treated free of charge. There are accommodations for twenty patients, and many children who would otherwise have received no medical treatment have been cared for.—*N. Y. Medical Journal*

LETTERS RECEIVED.

Dr. Pinkney Thompson, Bowling Green, Ky.; Dr. F. M. Haners, Buffalo, N. Y.; Dr. E. J. Mellish, Ishpeming, Mich.; Dr. J. J. Bland, Houma, Tex.; J. Walter Thompson, J. H. Bates, New York; Dr. J. M. Dunham, Columbus, O.; Dr. J. H. Bennett, Coldwater, Mich.; Dr. J. F. Thompson, Lexington, Ky.; Dr. A. L. Hummel, Philadelphia; Dr. D. P. Lincoln, Nantucket, R.I.; Dr. R. J. Duglison, Philadelphia; Dr. H. V. Ogden, Milwaukee,

Wis.; Dr. Andrew J. Coey, Chicago; Dr. F. Wertz, Jasper, Ind.; Dr. Chas. E. Sajous, Philadelphia; Thomas Leeming & Co., New York; Dr. R. Harvey Reed, Mansfield, O.; Dr. Thomas Elliott, Worth, Tex.; Dr. Harold N. Moyer, Chicago; Smithsonian Institute, Washington; Dr. Lachlan Tyler, Washington; Subscription News Co., Chicago; Dr. C. Eugene Riggs, St. Paul, Minn.; Dr. Jas. Dudley Morgan, Washington; Dr. C. H. Smith, Lebanon, Ind.; Dr. O. H. Merrill, Corinna, Me.; Dr. R. F. Sutton, Deer Park, Md.; W. P. Cleary, New York; Malted Milk Co., Racine, Wis.; Dr. Wolfred Nelson, Pine Bluff, Ark.; Dr. R. L. Brodie, Charleston, S. C.; J. B. Lippincott, Philadelphia; Nichols & Shepard, Three Rivers, Mich.; *British Medical Journal*, London, Eng.; Dr. J. M. Emmert, Atlantic, Ia.; Gannt & Janvier, New York; Dr. Wm. Bock, Fort Bidwell, Cal.; Dr. H. G. Chritzman, Welsh Run, Pa.; Dr. J. E. Davidson, Unity Station, Pa.; Dr. Benjamin F. Gibson, Midway, Tex.; Dr. Wm. D. Ruhl, Sheldon, Ind.; Dr. T. Walton Todd, San Diego, Cal.; Dr. Wm. B. Atkinson, Philadelphia.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from August 10, 1889, to August 16, 1889.

Major William H. Gardner, Surgeon U. S. Army, Washington Bks., granted leave of absence for one month. Par. 1, S. O. 183, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, August 13, 1889.

Major Washington Matthews, Surgeon U. S. Army, promoted to Surgeon U. S. Army, with rank of Major, to take effect from the 10th day of July, 1889, vice Tonn, promoted. War Department, Washington, D. C., August 14, 1889.

By direction of the Secretary of War, a board of medical officers, to consist of Lieut.-Col. Anthony Heger, Surgeon, Capt. John O. Skinner and Capt. James C. Merrill, Asst. Surgeons, will assemble at the U. S. Military Academy, West Point, N. Y., on August 25, 1889, or as soon thereafter as practicable, to examine into the physical qualifications of the candidates for admission to the Academy. Par. 9, S. O. 185, A. G. O., August 12, 1889.

By direction of the Secretary of War, Capt. Joseph Y. Porter, Asst. Surgeon, now at Jacksonville, Fla., will, if the state of his health will permit, proceed to Jackson Bks., La., and report to the commanding officer of that post for temporary duty, and by letter to the commanding General, Div. of the Atlantic. Par. 16, S. O. 186, A. G. O., August 13, 1889.

Capt. Valery Havard, Asst. Surgeon U. S. Army, granted leave of absence for one month, to take effect about October 1, 1889, with permission to apply to Division Hdqrs. for an extension of one month. Par. 3, S. O. 80, Dept. Dak., St. Paul, Aug. 10, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending August 17, 1889.

Surgeon B. F. Rogers, detached from U. S. S. "Alliance" and wait orders.

Surgeon G. E. H. Harmon, ordered to the U. S. S. "Constellation." August 13, 1889.

Asst. Surgeon C. H. T. Lowndes, ordered to the U. S. S. "Constellation." August 13, 1889.

Asst. Surgeon C. J. Decker, detached from U. S. S. "Lancaster" and granted four months' leave of absence.

P. A. Surgeon L. B. Baldwin, detached from U. S. S. "Ranger," ordered home and wait orders.

Surgeon H. P. Harvey, ordered to the U. S. S. "Ranger." P. A. Surgeon P. A. Lovering, ordered to the receiving ship "Wabash," at Boston Navy Yard.

Surgeon C. A. Siegfried, ordered to the naval station at New London, Conn.

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ORIGINAL ARTICLES.

ABSTRACT OF A PAPER ON THE CHOICE OF TREATMENT OF URINARY CONCRETIONS.

Read in the Section of Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association, held at Newport, June 25, 1889.

BY JOHN W. S. GOULEY, M.D.,
SURGEON TO BELLEVUE HOSPITAL.

In the examination of the several modes of treating urinary concretions, the question of their indications and contraindications is worthy of special attention, since adherence to a single procedure belongs to the medicine of a remote past. Modern medicine demands that preventive measures be taken in threatened calculous affection at the first sign of coming of hyperlithæmia; that when hyperlithuria exists, medicinal treatment be resorted to; that when calculi are formed, mechanical means be promptly applied for their removal; that when the calculi have been removed, the cure be accomplished by suitable after-treatment; and that when mechanical treatment is contraindicated, a judicious course of palliative treatment be adopted. Therefore the treatment of urinary concretions is now arranged into the preventive, medicinal, palliative, mechanical and post-mechanical treatment.

The preventive treatment embraces hygienic, medicinal and mechanical means. The needed hygienic observances comprise diet, exercise, abstinences and raiment. The medicinal means of prevention are directed against dyspepsia and intestinal and hepatic inaction. The mechanical means of prevention are applicable to cases of bladder injuries, of foreign bodies in the bladder, and of stagnation of urine.

The medicinal treatment is applicable to cases of persistent hyperlithuria, nephralgia, and very small uric acid concretions, but is of no avail as a solvent of medium sized or even of small calculi. It has long been supposed that alkalies taken by mouth and excreted by the kidneys act chemically upon uric acid stones, forming soluble salts, and so disintegrating these stones. Such, however, according to Denamiel, is not the case. He believes that much good is accomplished by the use

of alkalies, that they act little, if at all, directly upon the saline constituents of stones, but rather upon their mucons cement, thus disgregating without disintegrating the calculous particles and rendering the stones inordinately friable. In persistent hyperlithuria, continuance of the medicinal part of the preventive treatment, and the use of solutions of salts of potash, soda, and lithia—natural preferable to artificial solutions—in moderate doses for two or three weeks ordinarily fulfil the indication of dissolving uric acid sand and of preventing the formation of stone, besides relieving the irritation caused by the sharp-pointed crystals. Soap pills, and potash and soda solutions, long continued, greatly disturb digestion and even tend to increase uric acid formation.

The palliative treatment is indicated in patients who are enfeebled by intercurrent disease or by grave lesions of the urinary organs caused by the presence of a stone which cannot be safely removed, and comprises medicinal and mechanical means designed to mitigate pain and prolong life. In such a case the failing strength of the patient is supported by suitable food and mild stimulants. The teasing spasms of the bladder are relieved by the judicious use of belladonna, and the pain assuaged by opium. Much comfort can be obtained from cleansing the bladder with acidulated warm water, which tends to counteract the bad effects of ammoniacal urine; from occasional vesical injections of mucilaginous decoctions; and, in the case of phosphatic calculi, from irrigations with acetate of lead solution, which may cause such a decrease in the volume of the stone as materially to mitigate the suffering. Hot fomentations to the hypogastrium, hot hip baths, posture, etc., and all useful adjuvants.

The mechanical treatment consists in the application of means adapted to the removal of calculous concretions by the natural route to the bladder or by an accidental or an artificial route to the urethra, bladder, ureter or kidney, according to the particular exigency.

Preparatory treatment is needed in the great majority of cases. The required instruments are rendered aseptic, and all operations are performed with antiseptic precautions, even simple catheterism.

For the purposes of surgeons the mechanical treatment of urinary concretions is arranged into lithecboly, lithexaeresy, litholysy, lithotomy and lithotrixy.

Lithecboly—the casting out of stone, stone expulsion—occurs spontaneously, but is often brought about by artificial means, medicinal or mechanical, generally by both combined. During spontaneous lithecboly the stone has been known to perforate the renal pelvis or the ureter and finally make its exit through the lumbar region, or enter the peritoneal cavity and cause fatal peritonitis. It has made its way from the bladder to the rectum, from the urethra to the perineal or the scrotal connective tissue, sometimes giving rise to the fatal infiltration of urine. Therefore when spontaneous lithecboly has begun it should be aided by judicious artificial means.

Lithexaeresy—the extraction of calculi—is resorted to when the bladder contains small calculi or fragments that can be removed by means of specially constructed forceps, by the spoon lithotrite, and also by hydro-pneumatic aspiration, or, when such calculi lodge in the urethra, by means of forceps adapted to the urethra.

Litholysy—the dissolution, or more properly the decomposition of stones in the bladder—is applicable only to phosphatic stones; the agents proposed for the dissolution of other stones being of such a nature as to destroy the bladder before acting upon the stone. They are therefore rejected. One of the most efficient methods of litholysy applied to phosphatic stones is that suggested by Dr. Hoskins, of Guernsey. It consists of vesical irrigation with an aqueous solution of acetate of lead rendered clear by the addition of a trace of acetic acid. By this method there is no dissolution, but a double decomposition, resulting in the formation of an insoluble phosphate of lead in an impalpable powder, and a soluble acetate of the bases. Another method that often renders much service in the case of phosphatic gravel, or stone, is the daily irrigation of the bladder with warm water, to which may be added one minim, and sometimes two minims of hydrochloric acid to the ounce.

Lithotomy, in the sense of cutting for stone, embraces nephro-, uretero-, cysto-, and urethrolithotomy.

Nephro-lithotomy means to cut open the kidney for the extraction of a stone or several stones lodged in a calyx, in its pelvis, or in its substance, whether the calculus or calculi fill the pelvis or have partly obstructed the ureteric orifice and caused pyonephrosis. The operation is generally performed through the loin, and is indicated when, medicinal treatment having failed, the distress caused by the stone is unabated, the urine continues to be purulent with occasional copious admixture of blood and small calculi or particles of the main calculus. When it has not been too

long delayed, nephro-lithotomy has given good results, and a very small mortality. The exploratory operations have not been mischievous though many have been performed and no stone found.

In the lumbar operation the renal pelvis is sometimes directly opened without interference with the substance of the kidney. In this case the operation is strictly a pyelo-lithotomy, rather than a nephro-lithotomy.

Uretero-lithotomy may be performed in two situations; first, by a preliminary trachocystotomy, when the calculus is lodged at or near the lower extremity of the ureter; second, in the lumbar region, but in this region the diagnosis of impacted calculus is attended with many difficulties. If, however it be made, it is possible to incise the ureter longitudinally upon the stone, after whose extraction the ureteric wound can be stitched with very fine silk properly sterilized. The objects being to prevent a lumbar urinary fistula, and to avoid nephrectomy. It is also possible to perform uretero-lithotomy near the sacro-iliac synchondrosis through an incision such as is made for ligature of the primitive iliac artery.

Cysto-lithotomy has been performed in modern times with much greater frequency than lithotrixy, partly because the indications and contraindications of these two operations have not been as generally studied as they merit. There are too many surgeons who perform exclusively cysto-lithotomy or lithotrixy, instead of striving to adapt to individual cases the modes of treatment which are most likely to meet their requirements. This is probably owing to the fact that there are good lithotomists who have never been able to perform lithotrixy with success, and skilled lithotritists who have not taken the pains to acquire a practical knowledge of lithotomy. Both operations are indeed very difficult and demand patient study, as well as carefully conducted experiments on the cadaver, before they can be intelligently practiced upon the living. In lithotomy, success is not attainable without this preliminary training. In lithotrixy, failure to acquire the necessary manual dexterity and delicacy of touch after repeated trials on the dead clearly shows that upon the living this operation can be safely undertaken only by those who have attained the requisite skill.

The desirable and objectionable features of the different cutting operations for ridding the bladder of a stone or of several stones are so closely balanced that it is difficult to state with precision in what may consist the superiority of one method over another.

When it is decided that cysto-lithotomy shall be performed, the question naturally arises, what special method seems best suited to the case? A cursory review of the origin, features and results

of each method may aid in the settlement of this question.

The operations of cysto-lithotomy are arranged into the infra-pubic and supra-pubic.

The infra-pubic operations comprise the perineal and the recto-vesical.

The perineal operations are : the lateral, the medio-lateral, the bilateral, the prerectal, the medio-bilateral, the median (Berlinghierian), the median (Allartonian), lithoclastic trachoeo-cystectomy (Dolbeauian), and modifications of most of these methods.

The recto-vesical operations are : the external urethro-recto-vesical (Sansonian), the external recto-vesical (Sansonian), the internal recto-vesical (Sleighian), and their modifications.

The supra-pubic operations comprise many modifications of the original Franconian method to the present time.

Lateral perineal cysto-lithotomy is indicated : in young children, to whom, however, all the methods of perineal lithotomy may be applied with greater success than to adults ; in adolescents whose bladders are unduly irritable ; and in the case of those adults who are suffering so much from cystitis that complete drainage of the bladder is of as much consequence as extraction of the stone.

This operation is contraindicated in patients suffering from calculi of small size that can be destroyed at one or two lithotriptic sittings, or in cases of friable calculi of one inch or even one inch and a half in mean diameter where the bladder may tolerate a prolonged sitting with extraction of the fragments. It is also contraindicated in cases of elderly men suffering from urethro-vesical prostatic obstruction. In such cases trachoeo-cystectomy with median incision or excision of the "bar," or tumor, as the case may be, is likely to fulfil the two indications of relieving the obstruction to urination and of permitting the extraction of the stone.

The desirable features of the lateral method are : it affords an ample outlet for stones of medium size ; it effects complete drainage of the bladder ; and it is particularly suitable in young children and also in adults when the bladder needs rest and efficient drainage.

The principal accidents of this method are : failure to reach the groove of the staff and consequent injury of the adjacent parts ; wound of the rectum ; wound of the interior of the bladder ; excessive hæmorrhage ; urinary fever ; infiltration of urine ; laceration of the vesical neck in forcible extraction of a large stone ; general cystitis ; peritonitis ; and pyosapremia. Most of these accidents are common to the other methods of perineal lithotomy.

In the lateral and in most of the other methods of perineal lithotomy, injury is very rarely done to the seminal ducts with the knife. These ducts

are, however, very liable to be destroyed by the general laceration incident to forcible extraction of large calculi, the result to the patient being impotency. On this account all stones exceeding one inch in diameter should be broken before extraction.

The mortality from the lateral method is computed at 12 per cent. The great majority of deaths after lithotomy are, however, attributable to long-existing disease of the urinary tract, rather than to the operation itself. Probably the best results ever obtained by any individual surgeon were those of Dr. Dudley, of Kentucky, who operated by the lateral method upon 225 patients, only seven of whom died. Dr. Valentine Mott had performed lithotomy fifty times and lost only one patient, afterwards he had more fatal cases.

The medio-lateral operation, performed upon a rectangular staff by Sir James Earle, Dr. Nathan R. Smith, and Dr. Mercier, was, in 1846, adopted by Dr. Buchanan, of Glasgow, who asserts that it is of easier and more rapid execution than the lateral method ; that it is less formidable owing to a more limited division of the parts ; and that the risks of hæmorrhage, injury to the rectum, and infiltration of urine, are less than in the lateral method. The operation has many times been performed by Dr. Buchanan, Dr. Lawrie, Dr. Alan P. Smith, Mr. Henry Lee, and others. The mortality is about 10 per cent.

The bilateral operation has for its main feature the double incision, which permits the extraction of a larger stone than can be safely removed through the tract of the unilateral incision. The mortality from the bilateral method in the time of Dupuytren was over 20 per cent. It has since been reduced to about 11 per cent. in the practice of the late Dr. Paul F. Eve, whose records show eight deaths in ninety cases, in the last forty-five of which, however, only two deaths occurred.

The prerectal operation, according to Nélaton, has for its main feature the avoidance of the urethral bulb. The bugbear of excessive hæmorrhage from division of the bulb has led to many unnecessary and sometimes hurtful devices for avoiding this bulb, which, in point of fact, is almost always cut, in perineal lithotomy, and seldom bleeds excessively when it is freely divided ; a slight wound being more likely to bleed profusely. To Mr. Skey lithotomists are indebted for exposing this fallacy. The results of the prerectal are about the same as those of the bilateral method, of which it is but a slight modification.

The medio-bilateral operation, proposed and performed in 1829 by Civiale as an improvement on the bilateral method, consists in making a median external incision including the urethra, and in using, for the deep incision, a straight-bladed instead of the flatwise-curved-bladed double lithotome. Civiale's advocacy of this valuable

method is owing, as he says, to its easier execution than the operation of Dupuytren, and to its occasioning less hæmorrhage. This operation has been performed with great success by Dr. W. T. Briggs and others. Dr. Briggs and the late Dr. J. C. Hutchinson have employed a double lithotome similar to Amussat's. Others have cut with a single-bladed lithotome, thus making a veritable medio-lateral operation. Dr. Briggs has performed the medio-bilateral operation upon 136 patients with only three deaths.

The median (Berlinghieri) operation, suggested by the Marianian, consists in making a median perineal incision, in opening the urethra at its bulbo-membranous junction, and in incising the prostate and vesical neck in the median line. Vacca Berlinghieri proposed it as a substitute for the external urethro-recto-vesical operation of Sanson. The liability of wounding with the knife, or of lacerating during extraction, the rectum or ejaculatory ducts, renders this operation very objectionable. It is, however, the only method to which strictly the name of median lithotomy can be applied.

The median (Allartonian) operation opens a route to the bladder permitting the safe extraction of only small and medium-sized stones. Large stones, of 2 or more than 2 inches in diameter, have been easily extracted, during this operation, from adults, and proportionately large calculous masses from adolescents and children, but only in cases of very soft and extraordinarily extensible prostates. Under ordinary circumstances forcible extraction is as hurtful in the median as in other perineal operations. On this account Mr. Allarton advises that the larger stones be broken up and their fragments extracted.

This method of lithotomy is indicated in children, in adolescents, and in adults whose bladders do not require drainage. It is indicated also in elderly men suffering from prostatic obstruction due to urethro-vesical "bars" which need incision or excision, and when the combined operations of lithotomy and prostatotomy or prostatectomy may be advantageously performed.

The median operation is contraindicated when the bladder requires drainage, and of course when the indications for lithotripsy are plain.

The desirable features of the Allartonian method are: the median incision, by which excessive hæmorrhage is avoided; dilatation instead of incision of the prostate and vesical neck; and little if any liability to infiltration of urine. As ordinarily performed it is not so difficult as the other methods, except in cases of very hard prostates, and in very young children whose urethræ have been torn across and even severed from the prostate in the attempt to dilate the prostatic region with the finger. It is therefore wise to substitute for the finger a metallic dilator such as that devised by Dolbeau. The mortality from the Allartonian operation is about 10 per cent.

Lithoclastic trachoele-cystectomy, otherwise known as perineal lithotomy, when stripped of the details prescribed by Dolbeau for its performance, bears much resemblance to Allarton's method except in the accomplishment of the dilatation—to the extent of $\frac{1}{8}$ of an inch—which is made with a specially constructed instrument much safer in its application than the antero-posterior digital dilatation of Allarton. Another difference between Allarton's and Dolbeau's methods is that, in the first, medium-sized stones are removed entire and larger stones are fractured before extraction, while in the second case the operation is intended only for large stones which are to be fractured before extraction. Like Allarton's method, this operation is not applicable when the bladder requires drainage.

The mortality from lithoclastic trachoele-cystectomy in Dolbeau's hands was at the rate of about 16 per cent. In view of the fact that Dolbeau's cases were of large stones, this death-rate may be regarded as small, since the mortality from other methods of perineal lithotomy without lithoclasty, for large stones, was formerly 30 per cent.

The external urethro-recto-vesical and the external recto-vesical operations of Sanson have long ago been abandoned. The external wound, continuous with the urethra, prostate and rectum, in one case, and the great liability to urinary fistula in both cases, render them very undesirable.

The internal recto-vesical method of Sleigh has been advocated partly because no other than the recto-vesical wound is inflicted. But even in this case urinary fistula has ensued. Its alleged advantages are: the absence of inordinate hæmorrhage, and the facility with which a large stone is extracted. In later years the wound has been successfully closed with silver sutures, and in one instance with the aid of Bozeman's button suture.

The accidents of recto-vesical lithotomy are, infiltration of urine, wound of the ejaculatory ducts, and wound of the peritoneum. The mortality is computed at about 19 per cent.

Supra-pubic cysto-lithotomy, condemned by Franco, its inventor, and urged by Rousset, who never performed it, lingered for a century and a half, when it was suggested by James and put into practice by John Douglas; performed for a time by Cheselden and modified by Frère Côme and others, again abandoned, then revived by the Souberbielles and by Amussat, was finally, on account of the mortality it occasioned, very exceptionally performed until these late years, when it was reinstated with improvements that now render it comparatively safe.

The operation is indicated in cases of large compact stones too hard to be broken in perineal cystotomy or cystectomy, in cases of such stones complicated with prostatic "bars," or tumors requiring incision or excision, in cases of stone with tumors of the bladder, and in cases of foreign

bodies in the bladders of patients suffering from prostatic obstruction, when these foreign bodies cannot be extracted by the natural route. In such cases the bladder must be ample, although the supra-pubic operation has been successfully performed when the capacity of the bladder has been markedly diminished.

For supra-pubic intra-vesical prostatectomy, a rectangular instrument, constructed on the principle of Skene's hawk-bill scissors, such as this now exhibited, may be employed with advantage. This intravesical prostatectome, made by Tiemann & Co., answers well the purpose of excising a V-shaped portion of the enlarged prostate. Mr. Stohlmann has promised to make an instrument of the same sort, capable of cutting a U-shaped segment. Pedunculated tumors of the prostate may be excised with rectangular short-bladed scissors adapted to the supra-pubic operation. The intravesical operations upon the prostate will be facilitated by electric illumination of the cavity of the bladder.

Urethro-lithotomy is described by Celsus as performed in the phallic region. This method of removing urethral calculi continued to be employed until the invention of lithotripsy, since which time the cutting operation has been abandoned, except in cases of very large stones. Urethro-lithotomy is now generally performed in the scrotal, perineal, membranous and prostatic regions. It is indicated in cases of urethral calculi complicated with narrow undilatable strictures, and in cases of large stones lodged in these several regions of the urethra when urethro-lithotripsy is not practicable.

Lithotripsy, the reduction of stone to small fragments, to a granular state, or to a powder, suggested probably by the observation of spontaneous fracture of stones in the bladder, by the lithotomy of Ammonius, by the lithoclasty of Franco and the Colots, and developed from the primitive contrivances of Paré, of Sanctorius, of Fabricius Hildanus and of Gruithuisen, satisfactorily demonstrated, in male patients, only in the first quarter of this century, could not at first be rightly valued, as too much was promised for, and expected of, the new operation with its complicated appliances. It over-zealous advocates endeavored to grade it above all other modes of treatment, and particularly to establish it in place of cutting operations, but at length acknowledged that it failed to supersede lithotomy and must be regarded solely as an additional resource of surgery, to be applied with proper discrimination in a particular class of cases. Nearly half a century of experience was needed to give lithotriptic instruments their present degree of simplicity and to enable Civiale and others to formulate proper rules for the guidance of those who undertake the operation.

The operations of lithotripsy comprise cysto- and urethro-lithotripsy.

Cysto-lithotripsy includes: lithotripsy by the natural route to the bladder; by an accidental route, *i. e.*, through a perineal fistula; and by an artificial route, *i. e.*, through a perineal incision.

Cysto-lithotripsy consists of: lithotripsy in multiple short sittings; in one or two long sittings, with extraction of the detritus by means of the spoon lithotrite; and in a single prolonged sitting, with aspiration of the detritus.

Urethro-lithotripsy includes: urethro-lithotripsy by the natural route; by an accidental route, *i. e.*, through a urethral fistula; and by an artificial route, *i. e.*, through a urethral incision.

Cysto-lithotripsy is indicated in cases where the stone is free, friable and of small or medium size. Under favorable circumstances stones of larger size may be crushed, and within certain limitations, plurality of stones is not a contraindication. The further requirements are, that the patient shall be in an otherwise good physical state, that his urethra shall be ample or susceptible of being safely rendered so, and that his bladder shall tolerate the necessary instruments.

The existence of stricture is not a contraindication of cysto-lithotripsy provided the urethra can be freely dilated or even enlarged by internal incision, but a narrow stricture in the perineal region, especially if it be of traumatic origin, contraindicates lithotripsy by the natural route and generally demands a cutting operation.

Urethro-vesical obstruction, unless very extensive, does not contraindicate lithotripsy. Contracture of the vesical neck often subsides soon after removal of the detritus. But in cases of thick "bars" at the neck of the bladder and tumors of the prostate, lithotripsy is not always practicable and cutting operations are sometimes required.

When the bladder walls are much thickened, when this viscus is permanently contracted, when its capacity is markedly diminished, or when it is inordinately irritable, provided the kidneys be not diseased, perineal cystotomy is indicated and lithotripsy contraindicated.

Advanced disease of the bladder, ureters and kidneys contraindicates both lithotomy and lithotripsy.

The worst results of lithotripsy, outside of France, until about twenty years ago, gave a mortality of 20 per cent., and the best results 9 per cent., the average being about 10 per cent., in a total of 992 operations.

Up to the year 1884, Sir Henry Thompson's own record shows a mortality from lithotripsy, in a total of 672 cases, of "forty-three, one death in fifteen cases, or under 6.5 per cent.;" while the deaths from lithotomy, also in his practice, were "thirty-nine in 110 operations, or 35 per cent."

To choose properly between cysto-lithotripsy in multiple short sittings, in one or two long sittings with extraction of the detritus by means of the spoon lithotrite, and in a prolonged sitting with

aspiration of the detritus, requires sound judgment based not only upon experience but upon careful consideration of the peculiar circumstances of each case. Therefore only general rules for guidance can be formulated, and these rules are varied to suit particular cases.

As a general rule multiple short sittings, of from one to three minutes, are applicable to patients whose bladders are only moderately tolerant and do not fully respond to ordinary preparatory treatment. Three or four such sittings, each with a single introduction of the lithotrite, four or five days apart, being ordinarily sufficient to cause the spontaneous expulsion of all the detritus of a friable and granular stone 1 inch in mean diameter.

One or two long sittings, say ten or fifteen minutes each, with five or six introductions of the spoon lithotrite, as recommended by Heurteloup under the name of lithocnosis, sometimes suffice to remove, from a tolerant bladder, the major part of a friable stone 1 inch or $1\frac{1}{4}$ inch in diameter; the remainder of the detritus being spontaneously expelled.

Cysto-lithotripsy at one sitting with aspiration of the detritus is said to be indicated when the stone is large and when there exists urethro-vesical obstruction; but it is often performed in violation of both of these indications. Note the many reported operations of "litholapaxy" for stones capable of being destroyed at a single two minute sitting. Another notable fact is that some of these reported cases were not cured at one sitting, but required two, three, and even four sittings, each followed by aspiration. The operation is named rapid lithotripsy as well as "litholapaxy," although it lasts from fifteen minutes to two hours. The sittings of ordinary cysto-lithotripsy average two minutes. If there be four sittings, only eight minutes are consumed in all for the safe trituration of the stone. This is indeed a rapid process, but prudence demands that there be intervals averaging four days between the sittings, or twelve days in all to effect a cure. Many cases of stones of $\frac{6}{8}$ of an inch diameter are, however, cured at a single sitting of three minutes without the aid of anæsthesia or aspiration, and with scarcely any pain.

Much may be said against the single sitting with aspiration of the detritus, when this sitting is prolonged one or two hours, as suggested by Dr. Bigelow. The urethral and vesical irritation caused by the repeated passage of the lithotrite and of the tubes for aspiration, the violence done to the bladder by the beak of the lithotrite in the many seizures of calculous fragments, the friction and perhaps the erosion of the mucous membrane by angular fragments during search for these fragments, and the several aspirations with sudden and frequent distension of the bladder are, to say the least, serious objections to the one pro-

longed sitting. The process of aspiration is itself so much more painful than the crushing of the stone and fragments (acting much of the time, in the hands of the inexperienced, like a cupping glass upon the vesical mucous membrane and contusing it in many places), that anæsthesia is rendered necessary, and this also is a grave objection, considering the fact that anæsthesia is to be prolonged one or two hours, particularly with the aid of sulphuric ether, whose ill effects upon the kidneys are now so well known. Is it not safer, in cases of large stones, to replace prolonged "litholapaxy" by suprapubic lithotomy or by lithoclastic cystotomy or cystectomy, and thus avoid exposing patients to the risks of general cystitis and pyelo nephritis, or to acute parenchymatous nephritis from the elimination of a large quantity of ether?

Aspirations of calculous detritus are often advantageous, particularly in cases of urethro-vesical obstruction, but need scarcely last longer than two minutes. Such aspirations, practiced with the utmost gentleness, can safely be made with Dr. Bigelow's excellent and most ingenious instrument, immediately after each three minute sitting at lithotripsy, though the case require three or four sittings in the course of two weeks.

Lithotripsy at one prolonged sitting cannot with prudence be generalized. The majority of cases of stone can be treated with greater safety to patients by other methods which leave behind no untoward vesical trouble. The early writers on "litholapaxy," allured by some brilliant results, hastily recommended it, and had many followers who, however, were soon disappointed by discovering that the new method is more difficult and more dangerous than the old, and that it requires no less discrimination. There are surgeons who still perform the operation at one prolonged sitting, notwithstanding that the effects of one or two hours' trituration of a stone and aspiration of its fragments are known to be so injurious and to be so much more grave than the irritation caused by fragments made in ordinary lithotripsy, which has for one of its objects the granulation and partly the pulverization of the stone.

"Litholapaxy" is no longer a novelty; it has been performed several hundred times since the year 1878, and may now be estimated at its right value. The great expectations of its advocates are not realized, for they have discovered that the operation cannot always be terminated at one sitting, that it is not suitable in a number of cases of large stones, that it is not applicable in many cases of stone complicated with prostatic obstruction, that it has been too often misapplied, by the over-zealous, in cases of medium-sized and even small stones amenable to ordinary lithotripsy in one or two short sittings, that in too many cases the injury inflicted upon the bladder has led to chronic cystitis and to the formation of phosphatic stones,

and that the necessarily prolonged anæsthesia is too dangerous to be generally employed.

"Litholapaxy," applied to a very limited class of cases, is a very good operation, in the hands of skilled and experienced lithotritists, but too much of an undertaking for beginners or for those who are not constantly occupied with surgery.

Respecting lithotripsy in children, only a few words will be said.

Lithotripsy was successfully applied in 1827 by Civiale to an ill-developed child 7 years of age suffering from a large vesical stone. In 1834 Ségalas reported a case of stone treated by lithotripsy in six sittings in a child aged 33 months, the stone measuring "11 lines." He subsequently recorded four additional cases in children aged respectively: 40 months, stone 10 lines, four sittings; 45 months, stone 13 lines, ten sittings; 4½ years, stone 1 inch, six sittings; 5 years, stone 15 lines, twelve sittings in two months; and no deaths. In 1838, Nathan R. Smith performed lithotripsy successfully upon four boys, of whom one was under 2 years of age, another 3 years, and the other two 7 years. In 1839 John Randolph performed this same operation upon two boys, one aged 4 years and the other 11 years, both cases being successful. In 1836, Leroy also wrote of lithotripsy in young children, and Guersant, who operated upon twenty-one children, lost six. Mercier (1862), Beyran (1863) Fournier (1874), Gonzalez (1883), and others, all spoke their word concerning lithotripsy in children, and the final conclusion of those whose testimony carries the most weight was that it should be reserved for cases of small stones requiring only one short sitting. Sir Henry Thompson, whose number of lithotriptic operations exceeds that of any other living surgeon, records, up to the year 1884, only three lithotrities upon children.

Dr. Keegan's success with lithotripsy and "litholapaxy" in children is likely to lead many young surgeons to the wrong use of these operations, and many will be the ill consequences of such a violent procedure as "litholapaxy." In some of the children subjected to "litholapaxy" by Dr. Keegan the detritus weighed only a few grains and could have been easily expelled spontaneously after simple lithotripsy, and he counts these cases among the triumphs of "litholapaxy;" and in other cases the stones exceeded 200 grs. in weight. In the first instance, simple lithotripsy was clearly indicated, while in the second, both lithotripsy and "litholapaxy" were clearly contraindicated. Of Dr. Keegan's first seventeen cases of "litholapaxy," in children aged from 20 months to 12 years, only one patient died. This speaks well for the tolerance of the patients' bladders and for the skill of the operator, but even if the percentage of mortality should, in future, be no greater in other cases of children between the ages of 20 months and 12 years, it would not render the op-

eration justifiable in children of 5 or under 5 years of age.

Lithotripsy would long ago have been largely performed in such children if it had been found generally safe. In cases where the stone is friable, small, weighing a few grains, lithotripsy is not only justifiable, but the proper operation, provided the urethra easily admit a suitable lithotrite; but to combine aspiration with such an operation is, to say the least, unnecessary.

Lithotomy is assuredly the safer operation in such children when the stone exceeds ½ inch in diameter, but when it is too large to be extracted, lithoclastic cystotomy is essential to success in the majority of cases.

Sir Henry Thompson gives a table in which it appears that of 473 lithotomies performed upon children of from 1 to 5 years of age, thirty-three died, or one in fourteen and one-third cases; and of 377 operations upon children of from 6 to 11 years of age, sixteen died, or one in twenty-three and one-half cases. Lithotripsy in children has not yet given such results on the same scale.

The general conclusion drawn from this study is that a proper choice of treatment of urinary concretions can only be made after careful consideration of each method and each case, there being no generalizable method.

YELLOW FEVER.

Read before the State Medical Society of Arkansas, Pine Bluff, Meeting May 28, 1889.

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With your kind permission I shall read a brief paper on yellow fever, a theme at once interesting to all students of medicine, and presumably of marked interest to my *confrères* in the "Sunny South."

In what follows I shall refer to my own experience of this dread disease at Panama on the Pacific, Colon on the Atlantic, both ports of the Isthmus of Panama. My studies and observations on the west coast of Mexico, where in 1885 I traced its epidemics of 1883 and 1884. My experience in the hospitals of Cuba, and finally my visit to Florida, in the fall of 1887, when I deliberately forecast the epidemic that swept Jacksonville in 1888. My letter of warning to the people of Florida was published in the *Times-Union*, of Jacksonville, November 30, 1887, and was recalled *when the disease was upon them*.

Now, to return to the Isthmus of Panama, where I lived and practiced from 1880 to 1885. I was back there twice in 1886 and twice in 1888, thus, to use an expressive phrase, bringing my knowledge down to date.

The yellow fever of the Isthmus of Panama I

describe thus: It is an acute infectious disease, a specific fever, ordinarily not contagious, but under certain atmospheric conditions, not yet fully explained, the disease undoubtedly develops contagious properties and epidemics result.

Yellow fever is ushered in in a variety of ways. It may be preceded by languor or malaise. The invasion may be abrupt. Generally characterized by a chill, often very severe, lasting one, two or three hours; the duration of the chill having a marked significance, severe chills marking nearly all fatal cases. Again, the disease may be ushered in by sudden nausea and faintness, without any warning, as in my own case during the Isthmian epidemic of 1880. Headache is always met with. I know of no exception to this statement. Frontal headache, a flushed face and gastric irritability in newcomers within the yellow fever zone is always very suspicious, a fact specially referred to in Dr. Belot's admirable book, *La Fièvre Jaune à la Havane*. Generally the headache is frontal; it may be bi-parietal and occasionally occipito-frontal, but, to repeat, marked headache always. In dealing with specific yellow fever of the Isthmus of Panama—of which, if respectability depends on its antiquity, is the oldest, most respectable and fatal variety known—a history of constipation obtains in nearly all cases. I can recall but a single case in my practice where the disease had been preceded by malarial diarrhœa. No condition of health gives immunity. It aims at all, be they healthy or unhealthy. It has a specific rôle. From early youth to advanced age it pursues its death-dealing mission. It is true that the mortality among children is less than at puberty and beyond. Pains in the legs and sacral region, the latter often intense and agonizing. I shall never forget my own experience. It seemed as if a legion of fiends were trying to dig out—if I may use the expression—my sacrum with red-hot pinners. The pain is excruciating and indescribable. In the majority of patients, the face was red, just like the face in scarlet fever—the boiled lobster color. The eyes at first were clear, providing there had been no antecedent hepatic disease; later they became suffused, injected. The skin was hot and dry. In many cases a peculiar biting heat was felt (like the *calor mordax* of pneumonia). It produced a strange sensation, resembling a current of electricity playing over the extended palm. Pulse hard and slow, varying from 65 to 80. Temperature, first stage 100° to 103°, where the cases proved fatal in the first stage, rising to 104°, 106° and 107°, the latter being the highest temperature noted by me in my practice. To fall slightly just before death. In the second stage or "period of calm," as it is termed, it fell, a remission only. At the beginning of the third stage or the stage of "secondary fever" it rises again. Respiration, as one would expect during the "hot stages," is hurried. At times a pecu-

liar moaning respiration of indescribable sadness. It fills the room and the vicinity. The respirations varied from 30 to 40 per minute, and at the close of the third stage 50 to 60, becoming less with the fall of the temperature just before death. Great thirst, nothing appeases it. Restlessness, no position giving any ease. Urine, at invasion, normal but high-colored. In the majority of cases on the Isthmus of Panama they died during the first stage. Such was the blood-destroying intensity of the disease, when all, or nearly all of the symptoms detailed and to be detailed, appeared. They do not appear in any stated order.

Within twenty-four hours of invasion, all the symptoms are intensified. Sacral pain and headache increasing. Gastric disturbances and epigastric tenderness developing early in many cases, the slightest pressure over the stomach causing intense pain and eliciting sharp cries. In cases where the brain symptoms were very marked, in some where patients were unconscious, the slightest pressure produced a contortion of the face and body. If deep-seated pressure was made they writhed upon their beds, but the instant that it was removed they became quiet again. Next, nausea and vomiting, at first a clear fluid, well named "white vomit" by Surgeon-General Blair, of British Guinea, South America. Tongue at first slightly coated. I am dealing with complicated cases. In patients who had suffered from intermittents, or bilious remittents, what is termed the characteristic tongue of yellow fever was not found. As stated, it was slightly furred. Later the fur increases from behind forwards, the tips and edges take on a deep red. Gums also become a fiery red, also the mucous membrane of the mouth and throat. The whole mucous tract suffers. Later, in the majority of cases, sore throat is complained of, due to stripping of the mucous membrane. Blood oozes from the denuded tongue and gums, giving an indescribable fetor to the breath; at times it collects on the teeth. In some cases a peculiar and characteristic odor is exhaled from the patient's body. Once recognized, it never will be forgotten. It somewhat resembles *l'odeur du cadavre*, of French authors. The late Dr. Stone, of Louisiana, was the first American writer, I believe, to recognize it. As he states, it is a very bad omen.

When patients die in the first stage, the urine always shows a large amount of albumen. The temperature remains high, 104° to 107°. Delirium, often quiet, marks the latter temperature. In some cases extending over more time—beyond the fourth or fifth day—the albumen does not appear until the close of the second or the beginning of the third stage. Albumen is a *sine qua non*. I know of no yellow fever without it, nor do any of my many friends practicing within the tropics. It never was absent in Isthmus cases. I never have seen or heard of a case of specific yellow

fever without it; never, either in the practice of Dr. L. Girerd, late Surgeon-in-Chief Panama Canal Company, in that of Dr. Didier, of the same service, or in the cases seen by my brother, the late Dr. George W. Nelson, at one time my partner, and later Resident Surgeon at the Canal Hospitals, Huerta Galla, Panama, giving a combined experience of hundreds and hundreds of cases. During an epidemic at Colon in the fall of 1883, it swept the shipping, over 150 cases, nearly all fatal. Again albumen in all cases. Suppression of urine is a late, and generally among the last symptoms. Where it is marked, they seldom recover. The bowels, if freely acted upon by the sulphate of soda, to be referred to, may not furnish any early information, diarrhœal motions produced by the soda being followed by "black vomit motions" in many fatal cases. These motions may precede or follow black vomit. No rule is absolute, or such material, well named, may only be seen at the autopsy. Black vomit follows the constant retchings and the "white vomit" of Blair. Black vomit is happily named, and shows innumerable fine particles or flocculi named black vomit or "coffee ground vomit," or the *marc de café* of the French writers, whose books on yellow fever are among the latest and very best. Frequently patients, without the slightest warning, commence violent vomiting. It pours forth from mouth and nostrils, often threatening to choke them. I have seen a patient resting quietly on his back after the subsidence of the gnawing sacral pain, when a perfect flood of black vomit has spurted from his mouth and nostrils up into the air, over bedding, mosquito curtains and the nurse. An old and intelligent writer on yellow fever, Dr. Dowell, has been singularly happy in his remark, that it is *per saltem*. So it is.

Here, I must pause and divide my yellow fever cases into two classes, and shall state that such are met on the Isthmus of Panama. One class, I took the liberty of naming "uncomplicated," the other "complicated." By uncomplicated, I mean the disease occurring in new comers. In these, brain symptoms and delirium were common. Such, almost without the classic exception, died, I never knew one to recover. The possession of full health meant rich blood, and a better culture fluid for the germs, that destroy it; the absolute destruction of the blood being but a matter of three or four days. I can best illustrate this by a case in the practice of my valued friend, Dr. L. Girerd, to-day a retired practitioner living in Paris. In the case referred to, on the fourth day of the disease, he failed to get a single red corpuscle in the blood—not one. The heart was driving a fluid through the vessels—one incapable of nourishing the brain and tissues. A fluid wholly devoid of the life sustaining oxygen carriers, the red corpuscles. His crucial microscopic work revealed a fluid, and in it the débris of cor-

puscles; or, to use the old time word that I have applied to this condition in yellow fever, a necremia, or death of the blood. His patient, a titled foreigner, a magnificent specimen of manhood, who stood 6 feet 4 inches in his stockings, died a few hours later. The "complicated" occurred in those who had been on the Isthmus from six months to sixteen years, and of course were profoundly malarious. I say of course, as no man, woman or child there escapes intense paludal poisoning. Sixteen years had failed to give the so-called acclimation to an American, Captain Dean. Specific yellow fever cut him off. He was my patient. An elderly Italian, M. Georgetti, after thirty-seven years' residence at Panama, died of specific yellow fever. I personally know a French gentleman in Guaymas, Mexico, who has spent over forty years on both coasts of Mexico. He went through epidemic after epidemic unscathed, but in the thirty-sixth year of residence, after passing through the Guaymas epidemic of 1883, he came down with the disease in 1884, when a few cases appeared, as is usual following *all epidemics within the tropics*, and just escaped dying. He in person related his experience to me. Acclimation is only so-called; it is a myth, but quite in keeping with much of our gross ignorance regarding yellow fever. Nothing, absolutely nothing, protects against yellow fever—except having had the disease, a fact well known to all close students of the disease within the tropics.

With this digression as a preparatory statement, I shall next consider the second stage, or "period of calm," as it is termed. There is a marked fall of temperature, but merely a remission, and most deceptive and dangerous it is. I can best illustrate this by actual cases. In two cases, both mine, during the epidemic of 1880; new arrivals, just married; he a Frenchman and Consul for France; she a Portuguese, aged 17. They had passed the first stage. His temperature had run up to 106°, hers to 105°. Then came the deceptive "period of calm." They felt so well that, despite my emphatic orders, they got up and walked about. He was in one room and she in another. In the woman's case, the secondary fever came on that night, together with a copious "vaginal hæmorrhage," practically, the equivalent of black vomit. She died within twelve hours of her walking about her rooms. His temperature again ran up; he died the next day. She, poor girl, was laid out in her wedding finery. They occupy a single grave in the foreign cemetery at Panama. Such, gentlemen, is malignant yellow fever as I know it.

As I have stated, yellow fever may be a disease of a single "access" or paroxysm. When it is so, the patient dies or enters on convalescence—such being the milder cases at Panama. Thus, it resolves itself into a sharp, clearly defined fever of a single paroxysm, or "access," as the

French so expressively term it. As nearly all attacked died, the milder cases were the exceptions. In the great majority the "period of calm" was deceptive, the slightest imprudence on the part of the patient ending in death later. The remission—I have seen the temperature as low as 99°—lasting from twenty-four to thirty-six hours, in cases marked by long chills, but twenty-four hours, to merge into the third stage of the disease, or that of "secondary fever." I have faced three epidemics of small-pox, one at home in Montreal and two at Panama. The severe chills in that disease, initiating the severe and confluent cases, the high primary fever, the second stage, to merge into the high temperature of the secondary fever, consequent blood changes and death. These cases, so familiar to me, have caused much thinking in connection with my studies in yellow fever and its blood changes. In a fatal case of confluent small-pox, without the slightest warning, I have seen a fluid, that to the eyes was indistinguishable with black vomit, spout from the mouth, high in air, over everything, staining the bedding just like black vomit; it was *per saltem*. To our life-curents we must look for information.

In the "third stage" the albumen appears, that is, if absent at close of "period of calm," it is invariably met here. Black vomit, and black vomit motions, suppression of urine, brain symptoms, etc., in cases ending fatally in this stage, all the symptoms crowd each other, and death closes the scene.

In "uncomplicated" cases, or where violent delirium may be met, many painful scenes result. A young Englishman, a picture of health, as attested by his magnificent physique and rosy cheeks, was stricken on landing. He was my patient. The case closed with furious delirium. Four men had to take turns in holding him, until death closed one of the saddest of sights.

A few words regarding the "fever of acclimation" of some writers. This, mark you, is generally preceded by a slight chill, a rapid pulse, a flushed face, suffused eyes, with a trace of albumen in the urine—in a word, it is a very, very mild form of yellow fever—the febrile movement lasting twenty-four to thirty-six hours, the mildest form of an "access." Failing a trace of albumen—it is not a fever of acclimation, that is to a tropical physician—and the other symptoms, no subsequent protection may be expected. In fact, some profound students of the disease within the tropics, consider it but a temporary protection, that in seasons of epidemic, while such are exposed in a lesser degree, still they are liable to contract the severe type.

Such, briefly told, is yellow fever on the Isthmus of Panama. I have seen and attended it in both cities, Colon and Panama. I wish to add, that it and other tropical diseases have caused, at a low estimate, fully 20,000 deaths on the line

of the Panama canal. The *New York World*, of May 18, 1889, credits the French Consul at Colon with saying that 15,000 Frenchmen have died. This probably is a mistake. I believe 20,000 all told, will be a generous estimate. The heaviest dying known to me was in November, 1884, during that epidemic at Colon, in the shipping and on the Isthmus. In an article in *Harper's Weekly* of July 4, 1885, I placed the death-rate for that month at 653 officers and men of the Canal Company. I obtained the figures from an inside source. The Canal Company's statements, as published in *Le Bulletin du Canal Interocéanique*, were as mendacious as they were misleading. DeLesseps' last ditch, that absurd creation of a man in his second childhood, has cost 20,000 lives, over \$200,000,000 in gold, has ruined hundreds of thousands of petty investors in France. Up to the hour of the crash, DeLesseps, in person, while knowing the whole truth, unblushingly told his fictions. Since 1884 he has known the whole truth. He is a wicked old man, who should be buried alive under his fictions.

Many of our confrères have fallen on the Isthmus. Some noble fellows are buried there—yellow fever, dysentery and pernicious fever. Yellow fever must be seen and studied in its own habitats. The Isthmus is one of the earliest.

My visit to Tampa, in November, 1887, impressed me in many ways, but what greatly interested me was to hear of cases of *non-albuminuric yellow fever*. These cases of so-called yellow fever, I believe, furnish that class of people who have had yellow fever two and three times. As may be inferred, I have no faith in any yellow fever without the invariable presence of albumen in the urine. I have yet to meet with or read of a well authenticated case of secondary yellow fever. Nor do I know of a single physician who has seen one.

Now I come to the subject of treatment; and here I most emphatically state that yellow fever has no treatment properly so-called. The host of so-called treatments justify my statements. How can a disease, according to the old view, characterized by the symptoms described by me, have one? Four centuries seem to have taught the profession nothing, or next to nothing. All that was known with absolute certainty was that people got yellow fever and died; the world heard of the dying, and that from Cuba it makes periodic invasions of the Sunny South. The treatment of yellow fever is purely symptomatic, my early treatment, up to 1884, was that of the "Old School." May God forgive it for its ignorance and charlatanism! Many authors have made a *rechauffé*, or re-hash, of the experience of others, they never having seen a case themselves. They are responsible for much ignorance, *if not worse*. Having tried all the so-called orthodox treatments, I, previous to the fall of 1884, settled on the following:

On being called to see a patient at the outset, I played a trump card and made quinine a diagnostic agent. We must bear in mind that a few hours in such cases may mean a life saved or lost. The following was the mixture :

R	
Quin. Sulph.	5j
Acid. Sulph., Dil. B. Phar.	5ij
Soda Sulph.	5ij
Tinct. Card Co.	5ij
Water, add.	3viii

℞ fiat mistura.

Sig.: Take a quarter at once and repeat in two hours.

This mixture, given French fashion, in *portions*, or portions, well diluted with water, made a perfect solution and was readily absorbed. It was my "multicharge gun." It gave me the best results. Hot baths. Pilocarpine in one case, aconite, etc., were in order, to produce free action of the skin. If the cases were purely malarial the quinine and sulphate of soda met all the indications. The sulphate of soda acts like a charm, free, bilious motions following. Every dose contained 15 grains of quinine and $\frac{1}{2}$ ounce of sulphate of soda. If after two doses the temperature remained high, 100° and upwards, with the usual symptoms, yellow fever was the verdict. Valuable time had been saved, the bowels freely acted upon—a most important indication. Later, I added to this treatment the following: A phosphoric acid mixture every hour or two, largely diluted with water; gave it and it only, purposely to bring about an acid condition of the blood. In a few words, to make it wholly uninhabitable to the germs. I adopted this course, only after serious thought, and said to a medical friend, "My next patient with yellow fever gets well or dies on phosphoric acid." I explained it to two friends, Dr. L. Girerd and Dr. Arthur Gore, who saw my cases. Also, to Dr. Bransford, United States Navy, who crossed the Isthmus on his way to Nicaragua. Previous to my adopting this purely acid treatment, following the quinine and soda mixture, my patients kept on dying in a way that was simply appalling. Not that I lost more than my confrères. Our helplessness dazed me. As stated, after mature deliberation, I settled on phosphoric acid, well diluted, for life or death. Three cases so treated, all in succession, got well, an absolutely unheard of thing there. I had friends see them—knowing as I do, what unbelief and professional jealousy will do. My reasoning was sound. The acid did not destroy the oxygen-bearing function of the red corpuscles, while the germs of yellow fever did, and so killed my patients. By rendering the blood acid these germs could not live and reproduce. They were destroyed *in situ*, and the blood ceased to be a culture fluid. Any student of medicine familiar with bacilli and their cultures knows full well, that even faintly acid solutions are fatal to the propagation of bacilli. Such was my reasoning

as far back as 1884. I have the notes on those cases. I took full notes on all my cases, as I had been taught to do, while a student at the Montreal General Hospital, 1868-72.

The blood is the habitat of the germ of yellow fever. When my first case in the series of three demanded my attention, alas, I could not procure a reliable phosphoric acid, when I had to fall back on a formula published on page 93 United States Dispensatory, being that proposed by Mr. James T. Shinn, *American Journal of Pharmacy*, October, 1880, thus: "*Liquor Acidi Phosphorici*. A similar preparation under the name of Horsford's Acid Phosphate has a large use in this country. The formula is as follows: *Liquor acidi phosphorici* (without iron): Calcii phosphat., 384 grains; magnesii phosphat., 256 grains; potassii phosphat., 192 grains; *acidi phosphorici* (60 per cent.), 640 minims; aq., q. s. to make a pint." As stated, not being able to secure a reliable phosphoric acid, I was forced to use Horsford's Acid Phosphate. It, as I knew, was a standard preparation of uniform strength and excellence. I strongly object to employing a patent preparation, so to speak. Its contents or make up was known and it was "Hobson's choice." The preparation did all that I anticipated, and I give its formula as found in the United States Dispensatory. I know what I used. It is essentially a strong acid mixture.

To repeat, having given my quinine and sulphate of soda mixture, thus securing free motions from the bowels. The malarial element being eliminated by the non-effect of the quinine, I then treated for yellow fever, thus: To bring about free action of the hot and burning skin was absolutely necessary. As stated at first, I tried hot baths, aconite, etc., and abandoned them, using a simpler and more effective means, in a vapor bath, named in Peru "Dr. Wilson's treatment," being that of an English physician, who used it with great success during an epidemic there in 1854 and later. The patient was placed on a chair—one with a wooden seat—all clothing being removed; he was covered with blankets tucked in closely under the chin. A spirit lamp was lit and placed under the chair, thus giving heat and vapor. To Dr. Wilson's vapor bath, I added a foot bath, all under the blankets, the water as hot as the patient could bear it. Finally I grafted on some Jamaican treatment, giving a pint of hot lemonade or orange-leaf tea. Under this triad a profuse perspiration followed, usually within ten minutes, it fairly ran off them. As soon as it was freely established they felt better. The scarlet hue of the face faded. The hard pulse became softer. If the bath caused any tendency to faintness, that was guarded against by a shorter exposure. With this I had no unpleasant symptoms, but with nitrate of pilocarpine profound pallor and faintness in a well nour-

ished man caused me alarm. I tried it in but a single case, and that was previous to my knowing of Wilson's vapor bath. The necessary exposure being made, ten to fifteen or twenty minutes, the patient stood up, the chair was slipped from below the blankets and he was lifted into bed *en masse* to prevent any escape of heat or moisture. More blankets were put over him. In some cases the perspiring lasted one or two hours, to the marked relief of the patient and the lessening of all the symptoms. After a variable time the skin again became hot and dry, when the same procedure was repeated as often as necessary. Thus two highly-important indications were met at the very outset. First, under the quinine and soda, free motions from the bowels were secured. Remember the marked constipation in these cases, often extending over three or four days, while the man had been eating as usual. Secondly, full and free action of the skin. According to my way of thinking and reasoning, the patient was placed under the most favorable conditions for fighting the disease. Generally large quantities of fecal matter were voided, and the pores were thoroughly opened. Next, the rest of the treatment was in order. It was of the simplest. A teaspoonful of the acid phosphate in a half-tumbler of water every hour or two, day and night, for the first twenty-four hours. It never caused nausea. I continued it for two or three days, according to temperature and symptoms. The bowels continue to act freely—bilious motions. Later they became very dark under the acid. Previously I had used sinapisms and a lot of things recommended by the books, and those supposed to be experienced in treating the disease. The sinapisms were placed over the stomach to try and check the distressing vomiting, at times they were beneficial; again, useless. Diet in these cases is a matter of very small importance. They are too busy with the disease. I fail to recall a single case where food of any kind was asked for. The highly irritable stomach must be remembered. Iced milk and beef broth in very small quantities at frequent intervals, *if the stomach tolerates them*. Iced lemonade and pure soda-water. Small pieces of ice allowed to dissolve in the mouth. I gave champagne a fair trial and abandoned it. I am satisfied that the purely acid treatment is ample. The simpler the treatment the better. The quinine and sulphate of soda mixture, vapor baths, *à la* Wilson, and the acid meets all requirements. I abandoned the old-time treatment. As I have already informed you, I had three recoveries, one after the other, all in infected premises where the previously attacked had died. These recoveries were in the fall of 1884. Early in the spring of 1885—March—I left for my annual holiday, visiting Nicaragua, when I returned to the Isthmus, to leave it, April 25th, for New York City.

Three swallows do not make a summer, nor do I claim that three successive recoveries are everything, but as nearly all attacked died, I do earnestly claim that three successive cases getting well furnish food for thought. Personally I am satisfied that by persistently acidulating the life-currents they ceased to be blood-heat culture fluids for the germs of yellow fever. I say germs. The following facts will I believe strengthen my claim that three successive recoveries were absolutely unheard of at Panama. A few words regarding the dying from yellow fever thereaway. I can recall twenty-seven admissions to the yellow fever ward of the Canal Hospitals, Panama, with but a single recovery. My brother, the late Dr. George W. Nelson, then Resident Surgeon, furnished me with the figures. Of 42 cases sent to the Charity Hospital, Panama, during the epidemic of 1880, when I had the disease, not a single recovery. As a concluding statement, I could amplify them to any extent—the Dingler Expedition and its experience will be ample. Mr. and Mrs. Dingler, accompanied by Mr. and Miss Dingler and a party of Canal Engineers, all told, a party of thirty-three, arrived at Colon in October, 1883, Mr. Dingler being the new Director-General of the Canal Works. Within six weeks of landing Count de Cuerno and Mr. Zimmerman were dead—specific yellow fever. Within fifteen months of the landing of that party of thirty-three, fourteen had had yellow fever and but one recovered (Mr. Dingler losing his wife, son and daughter), he was a patient of mine, a Canal Officer, and had been on the Isthmus previously. His regular life no doubt was the factor that saved him. Contrast three successive recoveries with the above—my cases were specific yellow fever.

As previously intimated, yellow fever spares none. While it is quite true that total abstainers have been swept away by it, it is equally true that even in the severest cases, they have recovered, where the moderate drinker was lost from the start. Time and again my own experience has confirmed this. The regular life, particularly within the tropics, is its own reward. In Ziemssen's Encyclopædia, Vol. II, in the article on yellow fever much valuable information will be found on this subject, the value of total abstinence—"Panama in 1855," Harper Bros., New York. Dr. Otis' work, "The Handbook of the Panama Railway," 1860, Harper Bros. Dr. L. Girerd's work on Panama, published in 1883, in French, in Paris, all contain much information regarding that land of pestilence and death, as well as "Five Years in Panama," 1889, Belford, Clark & Co., New York.

In reference to the inestimable benefits of total abstinence within the tropics, it simply confirms the opinion of a valued friend at Panama. The Consul-General of the United States, who, when asked, "How do you live in the tropics?" wittily

replied, "It all depends on the *liver*." So it does. An alcoholic liver in yellow fever means death.

The time allowed for the reading of this paper necessitates my leaving out much that I should like to discuss. I must ignore the interesting history of the disease and hasten on.

A few words or points on the after-treatment. The treatment during convalescence calls for constant watchfulness. It is here, that malarial symptoms crop up, in the cases of those who had been at Panama a few months. Dr. L. Girerd examined the blood of hundreds on arrival, and found it normal, in no case showing the malarial bacillus. After the first month he re-examined scores of them; the blood of all showed it, simply confirming the statements to be found in Dr. Tomes' work, "Panama in 1855," statement amplified in Dr. L. Girerd's work.

To return to the stage of convalescence, I have known a beefsteak to cause death on the tenth day. During convalescence such patients are simply ravenous. Well do I recall my own intense hunger. Slops are in order, fluid food, given at short intervals, not to overload the stomach. Its irritability lasts for weeks and weeks. Bathing, a thorough washing of the patient's body and hair daily in a weak carbolic bath, the thorough disinfection of the patient's effects and room.

The majority of cases were fatal on or before the fifth day, closing with the black vomit, suppression of the urine, etc. In such patients it was fever of a single "access," or paroxysm. Other cases passed through the "period of calm," and died in the third stage, or that of "secondary fever," from the sixth to the ninth day. Cases of typhoid character were rare. I saw but one, being that of my friend Dr. Arthur Gore, now in San Francisco, California.

The sequelæ: boils, pimples, parotid swellings, and intermittent fever, jaundice—I was of a rich canary color. It lasted a whole month. People were never curious about it or anxious to ask me questions—not any.

Now for a very brief reference to *post-mortem* appearances. My small experience under this heading simply confirms what an old and clear-headed American writer has stated, "Yellow fever has no pathology." I refer to Dr. Grenville Dowell, whose little *brochure* contains a mine of information, or what the great French Undertaker, M. DeLesseps, calls "an arsenal of facts."

The *post-mortem* findings are so variable in patients cut off by the same symptoms, that no reliance can be placed upon them. I deem it a blood disease, pure and simple, and, if my view is accepted, the absence of any marked pathological change, save in the blood itself, cannot cause surprise.

The liver: It presents a variety of conditions. I have found it fatty; again, fatty on section,

showing an immense quantity of oil globules; again, perfectly normal in size and color. The chamois-colored liver is supposed to be the characteristic liver. I never saw but one, and that was the only one in nearly one hundred autopsies made at the Canal Hospitals, Panama, by Dr. S. Didier, a gentleman profoundly versed in yellow fever. He was born in one of its habitats, the island of Martinique, French West Indies.

The kidneys: Nothing constant. I met them large and small; again, perfectly normal to the eye.

The stomach: This organ presents signs of acute inflammation. Generally its coats were thickened; it contained more or less black vomit; I saw nearly a pint in one case; its inner surface showing innumerable pink points or *foci* of congestion, and small deposits of blood. Dr. Castellanos, a physician of the Charity Hospital, Panama, a Spaniard, told me that it was the only constant condition found by him, and he, while living in Cuba, had made nearly 150 autopsies.

The brain I have never examined. Dr. L. Didier found nothing worthy of remark in his large experience. Nothing.

The blood: I have always found it in a perfectly fluid condition. Remember the destruction of the blood and the great amount of albumen eliminated by the kidneys. Its specific gravity taken by me two hours after death, was nearly normal. To this fluid we must direct our whole attention. To repeat, I consider it a blood disease, pure and simple, and have held this view since 1884. Death in these cases is due to a true necremia. If this view, which I believe is peculiar to myself, be proven, we have an explanation of a majority of the symptoms of yellow fever, and as already stated, it explains the absence of any characteristic pathological changes, save in the blood.

The brain symptoms are due purely and simply to the destruction of our oxygen-carriers, the red corpuscles. The great Virchow attributes loss of consciousness to their failure to carry oxygen. By rendering the blood uninhabitable to the germs that prey upon and destroy the corpuscles, we triumph. Much remains to be explained about yellow fever. Many honest and patient toilers are at work on this great problem. I believe that with the discovery of the specific germ by Dr. Domingos Freire, of Rio de Janeiro, Brazil, by Dr. L. Girerd, at Panama, and its discovery by Dr. Carlos Findlay in Havana—to his and the work of his friend Dr. Delgado, of that city—add to this, our knowledge of the truly wonderful strides made by these gentlemen in their bacteriological studies and inoculations—to the above, by acidulating the blood, as I have done, where it has invaded the system—with such factors, the future seems full of hope to me. May it prove so. Having digressed, I must go back to the *post mortem* findings

The bladder: Generally a few drachms of highly albuminous urine were found. Remember the suppression.

Black vomit has a peculiar odor, and is slightly acid to the taste. To clear up a vexed point in my mind, I collected some in one of my cases and tasted it. It required a little courage, but I was in earnest and working for results. I may state *inter alia* that it will never compete favorably with other beverages. The "vomit," on settling, deposits coffee-ground "particles," the fluid above being the color of weak black tea. Black vomit is not bilious vomit. I tasted it to clear up this very point. Black vomit as a symptom is of grave import.

It indicates blood changes—the beginning of the necremia. While at Panama I sent my friends specimens of my late patients. My rooms were miniature graveyards. Some "black vomit" sent to my old classmate, Dr. Wm. Osler, then Professor of Clinical Medicine in the University of Pennsylvania, with other materials furnished *pabulum* for a lecture on vomited matters. To-day, he is Professor of Practice of Medicine in the Johns Hopkins University, Baltimore, Md., and Physician-in-Chief to the magnificent hospital of the same name.

To recapitulate: Now that Drs. Freire, Girerd, Findlay and Delgado have found the same germ, Dr. Domingos Freire being the first investigator, and its discoverer, to him the honor and credit are due. He caused others to work. Now that this has been accomplished, I firmly believe a new era is at hand, and that soon, this constant reproach to our profession, and much vaunted modern civilization, the sway of yellow fever, is about to receive its *coup de grace*. Inoculations will protect man against this awful disease as vaccine does against small-pox. Dr. L. Girerd proved his good faith in such a vaccine, if the term is permissible, by making attenuated cultures of the microbes of specific yellow fever, and by inoculating himself and without carrying it to its full protective influence, he allowed himself to be bitten by mosquitos (Dr. Carlos Findlay's discovery) that had been feeding on a man in the yellow fever ward of the Canal Hospital, a case of specific yellow fever, the fifth day, the mosquitos were disturbed and allowed to bite him. The result was a mild yellow fever. I translated his report, and it was published in the *Canada Medical Record*, Montreal, in the fall of 1886, together with an editorial.

With inoculations to protect and prevent, and the purely acid treatment where the germs have invaded the system—with these, and a strictly scientific quarantine, *à la* Dr. Joseph Holt, our profession can save the lives of hundreds of thousands in the future, who but for such means would die like rotten sheep. The acid, I believe, is a germicide in these cases. I like the

term and make no apology for using it. Intermittent fever, as we well know, thanks to the crucial work of Leveran, Girerd and Osler, has its *bacillus malarie*; quinine is its germicide.

When these things are thoroughly understood and put in practice, travel in the tropics will be divested of its terrors. People ere visiting them for business or pleasure will be inoculated, and with quarantines, *à la* Dr. Joseph Holt, the commerce of nations will be almost free and untrammelled.

Here, gentlemen, I must say farewell. I have to thank you for your kind attention and patience. In the near future, I trust that you will recall these statements made in the presence of the Members of the State Medical Society of Arkansas, on this, the 28th of May, 1889.

Articles extensively quoted in preceding, from author's papers as under:

"Yellow Fever Considered in its Relation to the State of California." Ninth Biennial Report of the State Board of Health, 1886. Sacramento.

"Cuba in its Relation to the Southern United State; its Danger as a Disease-producing and Distributing Centre." Tenth Biennial Report of the State Board of Health, California, 1888. Sacramento.

"The Present Tendency to Epidemics." Tenth Biennial Report State Board of Health, California, 1888. Sacramento.

"The Isthmus of Panama Considered as a Disease-producing and Distributing Centre." Tenth Biennial Report of the State Board of Health, California, 1888. Sacramento.

"The Holt System of Maritime Sanitation, or an Ideal Quarantine." Tenth Biennial Report of the State Board of Health, 1888. Sacramento.

CASES OF INFANTILE HEMIPLEGIA.

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The following fourteen cases of infantile hemiplegia have come under my observation in this institution, all but one being under treatment at the same time, in a total population of 419 patients. They exemplify most of the symptoms usually found in such cases, and are, perhaps, of sufficient interest to be put on record, although I cannot lay claim to any original discoveries in connection with them. The histories furnished at the admission of the patients are, I regret to say, so imperfect as to be worthless for the purposes of this article.

Case 1.—Margaret B., aged 30. Said to have become paralyzed at the age of eight months. The left side of the face is smaller than the right, and less strongly innervated. Left arm shorter and smaller than right; good movement of elbow,

shoulder and wrist joints; imperfect abduction of fingers, movements of hand somewhat awkward and weak. Has occasional sudden choreiform twitchings of arm and hand. Left lower extremity not shortened and but slightly smaller than its fellow. She limps and drags the toe slightly in walking. Knee-jerk much exaggerated in left leg. She has frequent and severe epileptic convulsions, which begin by extension of the left hand and arm and conjugate deviation of head and eyes to left, before consciousness is lost. Frequency of convulsions much diminished by use of bromides. Her skin presents a deep bluish discoloration, doubtless from the effects of nitrate of silver.

Case 2.—Ellen B., aged 28. Says she became paralyzed in infancy. Left side of face better innervated than right. Right elbow and wrist flexed nearly at a right angle and capable of but little movement; fingers extended. All parts of the extremity shorter and smaller than that of its fellow. Hand practically useless. No decided difference in dimensions or mobility of lower extremities. Knee-jerks somewhat more active than usual on both sides. She has occasional general convulsions, which she says begin with cramping in the right arm.

Case 3.—Ellen B., aged 29. Says the right side has always been paralyzed. Face unaffected. Right upper extremity shorter and smaller than left; forearm pronated; wrist strongly flexed; hand closed with thumb outside. She cannot lift the arm to the level of the shoulder; flexion and extension of elbow-joint all good but supination is imperfect; can move the wrist but slightly. There are constant slow, slight, involuntary movements of the wrist and fingers. The right lower extremity is proportionately more atrophied than the upper; it is shortened three-fourths of an inch, and the thigh is three inches and the calf two inches smaller than its fellow. It is partially flexed at hip and knee, and there is marked talipes equino-varus. The foot is dragged in walking. There are involuntary movements of the ankle and toes, similar to those of the upper extremity. Has general convulsions, not very frequent. Order in which muscles are affected unascertained.

Case 4.—Georgiana G., aged 15. Left side of face slightly smaller than right; innervation not sensibly different. Left eye deviates upward and outward. Arms of equal length; left slightly smaller. Extension of left elbow and wrist incomplete. Both little fingers somewhat contracted. She has pretty fair use of the left hand. Left calf is one-half inch larger than right, thighs equal; no shortening. Left ankle cannot be (dorsally) flexed; attempts to do so result in adduction. She is not known to have had any convulsions since her admission, in 1887, until October, 1888, when she had one. On January 15, 1889,

she had four severe convulsions, and since then has dragged the left foot, which previously had not been very noticeably lame.

Case 5.—Mary J., aged 42. Right side of face smaller than left; tongue deviates to right when protruded; nystagmus; convergent squint of left eye. Elbow slightly flexed; forearm pronated. Cannot raise arm above the level of shoulder, fully extend elbow, or hyper-extend wrist. Can execute all the ordinary movements of the fingers, but only by making the same movements with the left hand. The right extremity is smaller than the left in all its parts and dimensions.

The right lower extremity is also much smaller than the left, especially the calf, which only measures $9\frac{3}{8}$ inches against $12\frac{1}{4}$ on the left side. The hip and knee-joints are somewhat limited in movement, and there is complete talipes varus, the patient walking on the outside of the foot. Knee-jerk exaggerated, right side. She says that the paralysis is congenital. Has epileptic convulsions, which are stated to have begun at the age of 37.

Case 6.—Kate T., aged 27. Says her paralysis is due to an injury to the head from a fall at the age of one year. No scar or evidence of fracture can be found. Left side of face smaller than the right, but seems equally well innervated. The left upper extremity is shorter and smaller than the right. Movements of elbow and wrist are free, but those of the shoulder are limited, and the fingers cannot be completely closed or abducted. The left lower extremity is shorter and smaller than the right; movements good, except that dorsal flexion of the ankle is imperfect; knee-jerk exaggerated. Convulsions pretty frequent; she says she first has a "nervous" feeling in her head, and then tremor in the left hand and foot, which sometimes passes off without loss of consciousness.

Case 7.—Georgiana H., aged 15. Says paralysis dates from an illness at two years of age. Left side of face smaller than right; innervation equal. Arms equal in size; movements in all joints free, but she is awkward and clumsy in the use of the left hand, and there are constant, slow, irregular movements of the fingers, especially marked when the hand is open. There is slight talipes equino-varus of the left foot, and the toe is dragged in walking. Has frequent epileptic convulsions, beginning with cramp in the left arm and hand. The bromides, which hold the convulsions in check to some extent, seem to aggravate the spastic character of the gait.

Case 8.—Martha T., aged 22. Left side of face smaller than right; no marked difference in innervation. The left arm is one-fourth inch smaller than the right; the fore-arm, on the contrary, one-half inch larger. The forearm is pronated, and the wrist flexed to a right angle, with little mobility. Voluntary movements of fingers very

imperfect. There are constant slow involuntary movements of the thumb and fingers, which probably account for the hypertrophy of the forearm. There is no atrophy of the lower extremity, and no impairment of movement except in the ankle, which cannot be flexed beyond a right angle. She has frequent attacks of convulsions, which begin by strong flexion of the left hand and forearm.

Case 9.—Louisa M., aged 27. Says she became paralyzed at the age of three months. Left side of face smaller than right, no paralysis. Left arm shorter and smaller than right; cannot be lifted above a right angle at the shoulder. Movements of elbow good; wrist cannot be hyper-extended; closure of hand imperfect. Right lower extremity longer and larger than left. Dorsal flexion of left ankle imperfect; knee-jerk exaggerated on left side. Feels premonitions of convulsions in her head, and has tremor of left hand and foot before losing consciousness.

Case 10.—Thomas M., aged 15. Left side of face smaller than right; innervation equal. Upper extremities equal in size. The fingers of the left hand tend to take the position characteristic of paralysis of the interossei, and the use of the hand is imperfect. When he opens or closes the left hand slight movements of the same character take place in the right. The left lower extremity is one-half inch shorter than the right; the knee cannot be completely extended, and there is slight talipes equino-varus. When he stands the toes are strongly flexed. When the weight is taken from the foot they are in constant, slow movement. He has frequent convulsions, beginning in the left upper extremity.

Case 11.—Riley T., aged 29. Says he became paralyzed in infancy. Right side of face smaller than left. Right arm not materially smaller than left; movement of fingers clumsy and imperfect. The arm jerks when he attempts voluntary movements with it, and there are slight movements of athetosis in the fingers. The right calf is three-eighths inch smaller than the left, and the right knee-jerk is exaggerated. There is tendency to hyper-extension of toes. He walks without noticeable limp. His convulsions, which are very frequent and severe, occur suddenly and without warning; he drops as if shot.

Case 12.—Edward H., aged 18. Says a rail fell on his head when he was two years old; attributes convulsions and paralysis to the injury. Has a depression in the frontal bone, about one inch from median line, three-fourths of an inch in diameter, and extending a little beyond the coronal suture. The left side of the face is slightly smaller than the right. The left arm is not shortened, but is slightly smaller than its fellow; the wrist cannot be fully hyper-extended, and the movements of the fingers are imperfect. When the hand is at rest there are constant slight move-

ments of the fingers, most marked in thumb and forefinger. Left lower extremity slightly smaller than right; foot cannot be extended without adduction, nor flexed (dorsally) beyond a right angle. There are constant slow movements of flexion, extension, adduction and abduction in the toes; the great toe is often raised almost to a vertical position. Says he has warnings of his convulsions, which are frequent, but cannot describe them. His attendant says they begin with contraction of the left arm and hand.

Case 13.—William McV., aged 28. Origin of paralysis unknown. Said to have been epileptic for seventeen years. There is no very marked asymmetry of the face, but innervation is rather better on the left side than the right. Slight divergent strabismus of right eye. There is no material difference in the length of the upper extremities. The left biceps measures $2\frac{1}{4}$ inches and the left forearm 2 inches more in circumference than the right. The right elbow and wrist cannot be fully extended; the hand can only be incompletely closed, and is of little use. Lower extremities of equal length, but the right thigh is $1\frac{1}{2}$ and the calf $1\frac{1}{4}$ inches smaller than the left. Cannot flex (dorsally) right ankle; foot deviates inward slightly when extended. Knee and hip slightly flexed. Patient walks with a limp, but does not drag foot. No involuntary movements of either extremity at time of examination. He has rather infrequent convulsions, which he says always begin with cramping in right hand and arm before he loses consciousness.

Case 14.—Susan B., aged 42. Said to have become paralyzed at the age of 7 months, and to have suffered from convulsions ever since. The face is much distorted by cicatrices from an extensive burn. The right upper extremity is 1 inch shorter than the left, but the circumference of the arms is equal, and the right forearm is only $\frac{1}{4}$ inch smaller than the left. There is free mobility of all the joints, but voluntary movements are clumsy and feeble, and there are almost constant irregular movements of the thumb and fingers more extensive than in any other of the cases. The right foot is in the position of equino-varus; the knee- and hip-joints are slightly flexed and cannot be fully extended, and locomotion is greatly impeded in consequence. There are athetoid movements of the toes. The patient has been received since this paper was begun, and there has not been, thus far, opportunity to observe the mode of onset of the convulsions. Mentally she is almost idiotic.

ANALYSIS OF THE FOREGOING CASES.

SEX.—Four of the patients are males and ten females. Most observers have found girls were more frequently affected than boys, but so great a predominance of one sex must probably be considered fortuitous. Gowers' states that of 80

cases 35 were boys and 45 girls. Of 120 reported by Osler² 63 were girls.

Side Affected.—In 8 cases the left side was affected, in 6 the right. Gowers³ says he found the left side paralyzed in 37 out of 80 cases, the left in 33, which leaves 10 unaccounted for. He considers that the two sides are affected with about equal frequency.

Atrophy.—It is, of course, the rule in hemiplegia that there is some shrinking of the paralyzed muscles. It has, however, frequently been observed in infantile cases that the bones of the affected side are less developed than those of the sound side. In my cases the bones of the face were as frequently affected as those of the extremities, being distinctly smaller on the paralyzed side in 10 cases. This is the more remarkable as in most of these cases there was no very noticeable difference in the activity of the muscles, though I found in several of them that the patients could not close the eye on the affected side while holding the other open. There was shortening of one or both paralyzed extremities in 10 cases.

Extremity Principally Affected.—In most of my cases the paralysis follows the general rule in affecting the upper more than the lower extremity. In case 2 the power and mobility of the leg are very slightly impaired, and the case should perhaps be considered one of brachial monoplegia. In cases 5, 10, and 14, on the contrary, the paralysis, atrophy and contracture are all in excess in the lower extremity, and in cases 3 and 4 it can hardly be said that either predominates.

Athetosis and Chorea.—In three cases there were slow, involuntary, irregular movements (athetosis) of the fingers, in one similar movements of the toes, and in three both fingers and toes were involved. In one case there were sudden, irregular movements of the paralyzed hand, which were not, however, very extensive or violent. In one case the muscles of the affected forearm were more developed than those of the sound side—doubtless on account of their continual activity. Osler⁴ only found athetosis in six of his cases.

Convulsions.—All of these patients are epileptics. The frequency with which cases of infantile hemiplegia are afflicted with epilepsy is in striking contrast with its comparative rarity in connection with hemiplegia occurring in adult life. The frequency with which this complication occurs has varied very greatly in different collections of reported cases, and no conclusions on this head can be drawn from these cases, as it is probable that the mental symptoms which occasioned their committal to this institution were less the direct effect of the cerebral lesions than of

the resulting epilepsy. All are subjects of the *grand mal*, but several of them have attacks, at times, confined to the paralyzed side, without loss of consciousness. In eight of the cases the convulsions begin with spasm of the paralyzed side; two fall suddenly and pass at once into general convulsions, and in four I have not been able to ascertain the mode of onset.

Strabismus.—Three of the fourteen patients have strabismus. The proportion seems large if it is merely a coincidence, and none of the patients present errors of refraction which seem to account for the state of the ocular muscles. Two of them (cases 4 and 5) were examined by Dr. T. E. Murrell, of this city. He found a considerable degree of hyperopia in the former case—a condition which is one of the principal causes of convergent squint, but would not seem to throw any light on the condition present. The other case was found to be emmetropic. In case 13, also, the only anomaly of refraction discovered is a moderate degree of astigmatism. On the other hand, the connection of the strabismus with the cerebral lesion is not easily made out. The muscles of the eye are not usually affected in paralysis from that cause, and in two of the three cases the eye affected is on the sound side.

Mental Symptoms.—It is probably impossible to say how much of the mental impairment noticeable in these cases is the direct effect of the damage to the brain and how much to the epilepsy from which all the patients suffer. Imbecility, amounting in some of the cases to almost complete idiocy, is a marked feature of all, and most of them manifest the selfish, irritable and quarrelsome disposition so common in epilepsy. The religious sentimentality so often observed in that disease is absent, and delusions are a prominent symptom in only one case.

I have not had, either here or elsewhere, an opportunity to make post-mortem examinations in cases of this kind. A full discussion of what is known in regard to their pathological anatomy can be found in the exhaustive paper of Dr. Osler, already referred to.

THE American Association of Obstetricians and Gynecologists will hold its next annual meeting at the Burnet House, Cincinnati, O., in the rooms lately occupied by the Military Order of the Loyal Legion, on Tuesday, Wednesday, and Thursday, September, 17, 18 and 19, 1889. No formal invitations will be issued to non-members, but the Association extends a cordial invitation to such members of the profession wherever resident as may feel interested, to attend the meeting and participate in the proceedings. The papers and discussions will embrace subjects pertaining to obstetrics, gynecology and abdominal surgery.

¹ Nervous Diseases, p. 540.

² Cerebral Palsies of Children, Medical News, July 10-Aug 11, 1888.

³ Loc. cit. ⁴ Loc. cit.

MEDICAL PROGRESS.

MIXED INFECTION IN GONORRHOEA.—Analogous to the definite sequelæ which are observed in various affections and which, as proved by bacteriological investigations, are caused by the entrance of various microorganisms into the tissues at the same time, are the various complications of gonorrhœa, such as inflammation of the erectile tissues, peri-urethral abscess, bubo, prostatitis, vesical catarrh, gonorrhœal rheumatism, peri- and parametritis, inflammation of the Fallopian tubes, Bartholinitis and endocarditis. These are mixed infections produced by the gonococcus together with other pathogenic microorganisms. The author adduces, in substantiation of this statement, the assertion of Bumm that the gonococci develop only in cylindrical epithelium, or in tissues which, in their histological structure, are closely related to cylindrical epithelium, and the fact, as experimentally demonstrated by Rinecker, that when gonococci are injected into the connective tissues they disappear without leaving a trace behind them. Throughout the entire course of gonorrhœa, however, opportunity is afforded for the entrance of other pathogenic organisms through the ulcerations of the mucous membrane. These find, in the profuse secretion present, the very best conditions for their propagation and further advance into the lymph and blood channels, whereby the complications of gonorrhœa arise. Were it not that gonorrhœa is a purely local affection of a mucous membrane provided with cylindrical epithelium, these complications would be observed very much oftener. The relative frequency of these complications, however, is explained by the readiness with which microorganisms other than those of the gonorrhœal variety find their way from the diseased mucous membrane of the genitalia into the tissues and lymph channels.

Bumm has discovered a yellowish-white diplococcus which, as well as the staphylococcus aureus and albus (which are often found in gonorrhœal complications together with the gonococcus) may easily be confused with the gonococcus and thus mislead one into the belief that the pathological process is a uniform one, whereas, in point of fact, it is a question of mixed infection.—GERHEIM, *Centralblatt für Gynäkologie*.

TREATMENT OF ABSCESS OF THE LIVER. By MON. CHAUVEL.¹—I have had opportunity to observe four cases of abscess of the liver in military hospitals. These abscesses occurred in soldiers returning from Tonquin and Algiers, all of whom were markedly anæmic as the result of dysentery. The air of their native country had at first ameliorated their condition, but soon the attacks of

dysentery and diarrhœa recurred, with febrile exacerbations, quotidian fever, intercostal pains, either vague or localized in the hepatic region, pain about the scapula, and absolute anorexia. Abscess of the liver was diagnosticated, the diagnosis being verified by means of an exploratory puncture. The development of these various symptoms was much more sudden in the cases of the soldiers from Tonquin than in the single instance of the one from Africa.

In two of the cases the abscess occupied the right lobe, in the other two the left lobe; these latter cases terminated fatally.

Incision with the bistoury presented no serious difficulties; it corresponded with the seat of swelling, at which point the puncture had been made with the trocar.

The following are the conclusions derived from a study of these four cases:

1. Immediate, direct incision of abscess of the liver by means of the bistoury presents no danger as regards the development of peritonitis, if it be made antiseptically.

2. The opening should be large and lead directly into the abscess cavity. On account of the retraction of the liver after the evacuation of the fluid, it is well to make it as high up as possible; if it retract upon the collapse of the ribs, resection of the latter may be indicated.

3. It is useless and perhaps dangerous to suture the liver to the edges of the parietal wound.

4. The large opening should be made early, and the exploratory punctures are clearly indicated as soon as there is a suspicion of pus.

5. It is almost always impossible to recognize the existence of multiple foci with sufficient accuracy to reject the possible intervention of an accessible tumor. In these perplexing cases the large incision in the principal focus causes the disappearance of one of the sources of fever; it favors the opening of the secondary foci into the principal cavity, already emptied, and if it does not arrest the progress of the affection at least it exerts no unfavorable influence upon its course.

6. Abscesses of the left lobe appear to be the more serious, a fact which may, perhaps, be explained by the possibility of a pericarditis by extension, and by the probability of other collections of pus in the large right lobe.—*Le Bulletin Médical*.

RUPTURE OF THE LIVER WITH A LARGE PERITONEAL EFFUSION OF BLOOD SIMULATING A RIGHT HÆMOTHORAX.—FÉVRIER and CHAVIER, (*Centralblatt für Gyn.*, January 19, 1889). A soldier was violently hurled from a falling horse in such a manner as to strike a tree with the left side of the thorax. The horse fell so heavily as to be instantly killed. The man was rendered unconscious; when first seen his face was pale, there was marked dyspnoea, a small pulse and

¹ Read in the Académie de Médecine, Paris, May 7, 1889.

grating of the teeth. He had passed urine. Sensibility was normal. There was a fracture of the middle portion of the 3d, 4th and 5th ribs. There was no superficial injury of the abdomen apparent and no where sensitiveness upon pressure. The liver dulness was normal, the abdomen soft. There was an area of dulness two fingers breadth in extent in the postero-inferior part of the right thorax. Respiratory movements were feeble. Rupture of the lung from indirect force, and a consequent hæmothorax, was diagnosed. During the next few days the bowels and bladder acted normally; the belly was soft and painless; the area of dulness on the right side gradually increased until it reached the angle of the scapula. The right inferior portion of the thorax expanded, dyspnœa and bodily temperature increased, and the patient died on the fourth day after the injury. The liver dulness had always remained normal. An autopsy revealed little worthy of note in the left lung; in the right pleural cavity there was about one-half a litre of fluid; the diaphragm was pushed up so high that the pleural cavity was encroached upon to one-half its extent. There was a great deal of blood in the abdomen. In the right lobe of the liver, 2 cm. from the suspensory ligament, there was a rupture through the entire thickness of the organ, 13 cm. in length. At the posterior border of this rupture there was a cavity of large size filled with fragments of liver substance. It may easily be understood why the above described symptoms gave the impression of a right-sided hæmothorax.

ON CREOLINE IN DYSENTERY.—N. P. SOSSOWSKY (*Pract.*, No. 14, 1889) used in sixteen cases of dysentery clysters of a solution of $\frac{1}{2}$ per cent. of creoline. The clyster (from 2 to 3 and even $3\frac{1}{2}$ litres) was generally given twice a day, sometimes three and even four times. No disagreeable secondary symptoms. The patients did not complain of either smarting or abdominal pain. The results obtained were as follows: In two cases the disease was broken up after two injections; in nine cases the bloody stools disappeared on the third day, in two on the fifth, in one on the sixth, and in another on the ninth. In the last case the appearance of putrid matter in the stools was not checked, but the patient recovered nevertheless. Not one of these patients died, although there were a great many cases with fatal termination reported in the city. From these observations the author draws the following conclusions:

1. Clysters of a $\frac{1}{2}$ per cent. solution of creoline possess antiseptic qualities and seem to be less dangerous and toxic than the clysters of sublimate or phenol.
2. Clysters of creoline check the blood without irritating the intestinal channels.
3. Cases acute from the beginning, with frequent tenesmus and copious bloody stools, take

a more favorable course and are cured more rapidly than cases insidious at the beginning, characterized by catarrhal stools.

4. In cases where the creoline clysters do not stop the development of the intestinal catarrh, clysters of tepid water and subsequently of a solution of acetate of lead $\frac{1}{2}$ per cent., or of tannin of 1-2 per cent., should be prescribed; at the same time a decoction of the bark of quinquina should be taken internally with sulphate of soda.

The author has successfully used the same treatment in two children, one 11 and the other 9 months old. Dr. Kolokoloff has also prescribed creoline clysters (1 per cent.) in twelve cases of dysentery; all the patients recovered without showing at any time alarming secondary symptoms.—*Les Nouveaux Remèdes*, No. 11, 1889.

THE DIAGNOSTIC TAMPON AND ITS VALUE IN THE RECOGNITION OF CHRONIC ENDOMETRITIS.—B. S. SCHULTZE (*Centralbl. für Gyn.*, Mar. 11, 1889). In 1880 Schultze described a method which he had been employing for several years as furnishing a means for the early diagnosis of endometritis. He now reaffirms all that he then said of the value of his method, and expresses much surprise that it has not attracted a greater amount of attention. The diagnostic tampon is made of absorbent cotton soaked in a 20-25 per cent. solution of tannin in glycerine. This, after careful cleansing of the vagina, is pressed firmly against the cervix so as to fully cover the os and portio vaginalis. The glycerine solution absorbs water from the surrounding tissues and allows it to escape, together with the watery part of the secretions, the remainder of which is arrested by the cotton. After 24 or 48 hours the tampon is removed, whereupon, if the uterus be healthy, a lump of vitreous cervical mucus is found. If, on the other hand, any portion of the mucous membrane above the tampon is secreting pus, the secretion will be found on the tampon. It is not the quantity and watery character of the secretion that proves the presence of endometritis, but the pus therein contained. The quantity of the secretion is often so moderate that patients do not complain of it, and indeed if the cervix and vagina are not affected a very considerable degree of endometritis may occasion so small a discharge that patients assure their physician in good faith that there is none.

Schultze claims that too much stress is laid upon abnormal discharge of blood as the diagnostic feature of endometritis, and that there is a much larger class of cases in which hæmorrhage has not appeared or does not tend to appear, and that these very cases of beginning endometritis are easily recognized by means of his tampon.

ON COMPENSATORY HYPERTROPHY AND THE PHYSIOLOGICAL GROWTH OF THE KIDNEY.—TH.

ECKARD reports, in *Virchow's Archiv*, No. 2, vol. cxiv, the result of careful comparative measuring and counting of the constituents of eight normal kidneys from different ages (1 day to 48 years), as follows:

1. With the cessation of embryonic growth new glomeruli no longer develop. The physiological growth of the kidney as far as the glomeruli are concerned is, therefore, purely hypertrophic. 2. The tubuli contorti increase considerably during the first years of the life of the individual, in thickness as well as in length. Subsequently growth is limited to increase in length, but the author is unable to decide whether it consists in hyperplasia or in hypertrophy of the epithelium. The examination of the intact hypertrophic kidneys in three interesting cases of congenital defect in the kidney showed that the compensatory hypertrophy of a kidney as result of an innate defect is caused primarily by a hyperplasia (an augmentation) of the glomeruli as well as of the urine channels, but that at the same time a hypertrophy of the Malpighian bodies and of the tubuli contorti is going on. Compensatory hypertrophy of a kidney as result of an acquired defect, however, is always caused by hypertrophy of its constituents.—*Centralblatt für Klinische Medizin*, No. 22, 1889.

CONTRIBUTION TO ELECTROTHERAPY IN GYNECOLOGY.—ORTHMANN reports the results obtained in 95 cases treated in Martin's clinic in Berlin. Among these, most of which were chronic cases of inflammation of the uterus and the surrounding parts, there were 36 cases of perimetritis; in one case there was a very favorable result, in 24 cases marked improvement, and in the remaining 11 no appreciable change. In cases where there was great sensitiveness, the faradic current or the positive pole of the galvanic current was employed; in cases of moderate sensitiveness the negative pole; this was introduced in the form of a ball electrode into the posterior cul-de-sac, while a flat electrode applied to the abdomen was made the other pole. The current varied in strength between 50 and 100 ma. The number of séances varied from six to eighteen, the length of each séance averaged five minutes. At most there were two séances per week.

In similar manner twelve cases of parametritis were treated; in eight of these there was improvement, in the others none. In five cases of para- and perimetritis, exudate of greater or less extent, there was improvement in three, no change in one, and retrogression in the last.

The most favorable results were obtained in the treatment of severe dysmenorrhœa and amenorrhœa. In twenty-six cases of dysmenorrhœa dependent upon metritis, endometritis, retroflexion of the uterus, and stenosis of the cervical canal, six were cured, while the others were mark-

edly improved. In like manner of four cases of amenorrhœa three were cured, while the fourth remains under treatment. In the treatment of dysmenorrhœa and amenorrhœa the negative electrode was used especially, being introduced into the uterus while a current of from 50–75 ma. was employed.

As a result of these experiments, the writer believes that additional information is required, especially as regards the treatment of dysmenorrhœa and amenorrhœa.—*Centralbl. für Gyn.*

THE INJECTION OF COCAINE IN SPASTIC CONTRACTION OF THE JOINTS.—In primary inflammatory contraction of the joints, that is, in those cases where a contraction of the joint results from an inflammatory irritation or from an inflammation of any of the constituents of the joint, LORENZ recommends (*Wiener klin. Wochenschrift*, No. 9, 1889) as the simplest and surest treatment for the removal of the muscle-spasm, injections of cocaine into the respective space of the joint. He uses for this purpose a common Pravaz syringe with a somewhat longer needle, and injects with antiseptic precaution one-half or a whole of a syringe of a 10 per cent. solution of cocaine into the joint. Immediately after the injection the pain disappears, and a few minutes later the joint may be put into the correct position and fixed, or extended. This mode of treatment is especially recommended for the correction of spastic club-foot. Children bear cocaine very well; in adults more caution is necessary, a few centigr. often being sufficient to produce the desired effect. In Albert's clinic a general narcosis is no longer used for primary inflammatory contractions.—*Centralblatt für Chirurgie*, No. 23, 1889.

SULPHATE OF ESERINE IN CHOREA.—REISS (*Pharm. Journ. and Transact.*, No. 2, March, 1889) recommends subcutaneous injections of sulphate of eserine for chorea; dose 0.001 gr., twice daily. He claims to have effected a cure in many cases after five or six days of treatment, although in acute cases of chorea in adults success was not so very brilliant. He obtained also satisfactory results with this drug in tetanus, paralysis agitans, spinal sclerosis, and in one case of hysteria in a man, accompanied by extreme excitement and a remarkable exaggeration of the reflex movements.—*Journal de Médecine de Paris*, No. 21, 1889.

ON INFANTILE LEUCÆMIA.—PROF. JAKSCH lost a patient some time ago, a little boy 20 months old who was suffering from genuine lymphatic leucæmia. This disease is extremely rare at this age, and consequently this case is quite interesting. The diagnosis was verified by the autopsy, M. Jaksch finding the typical lesions of the disease in the intestines, the liver and the kidneys.—*Le Bulletin Médical*, No. 45, 1889.

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SATURDAY, AUGUST 31, 1889.

PROGRESSIVE NEUROTIC MUSCULAR ATROPHY.

J. HOFFMAN bestows the above name on an affection of which he reports an original case, with further observations on three cases which had been previously described by F. Schultze, and an abstract of the literature of the subject. The disease seems to be a rare one, but he finds observations by Eulenburg, Eichhorst, Hammond, Charcot and Marie, Herringham, Tooth and Osler. It is in a marked degree hereditary, usually affecting several members of a family, and descending, in some of the recorded cases, to the sixth generation. Males are more frequently affected than females, and healthy females, in families subject to the disease, may bequeath it to their male offspring.

It may appear in infancy, and usually develops in early life, but cases are recorded in which the first symptoms were observed after thirty years of age. It probably begins with atrophy of the small muscles of the feet, but is apt to escape attention until the muscles of the legs become involved. Next in order, the small muscles of the hands are attacked, and subsequently the forearms, the thighs, and, in some cases the muscles of the trunk are invaded. Deformities result, varying according to the degree in which the different muscles are affected. The feet assume the position of talipes equinus, varus or equinovarus, the hands that of "main en griffe." These deformities, with the striking differences which usually exists between the degree of atrophy of the distal and the proximal segments of the limbs, impart a very characteristic appearance to

the patients. The affection is symmetrical, and proceeds from the most remote segments of the limbs toward the trunk. Although there is a tendency to ankylosis of the joints there are no contractures. Fibrillar twitchings of muscles has been observed in some cases. Tendon reflexes and mechanical excitability gradually disappear. The same is true of the electrical reactions; at a certain stage of atrophy the "reaction of degeneration" is present; ultimately all response to both faradic and galvanic currents ceases. Sensibility is impaired in less degree than the motor functions, and there is no uniform relation between the two.

Two autopsies are on record, one by Virchow and one by Friedreich. In both the muscles and nerves of the parts involved were found to present the changes characteristic of the degenerative atrophy of the nerves. Sclerosis of the columns of Goll was found in the spinal cord. From the course of the disease and the post-mortem appearances the author concludes that it is primarily an affection of the peripheral nerves. The prognosis, as to recovery, he considers entirely unfavorable, although the disease may be arrested for an indefinite period, and is not incompatible with long life. No cases are on record in which it proved directly fatal, but the possibility of such a result cannot be excluded. No remedies, thus far, have seemed to be of any avail.¹

THE ERRORS OF STATISTICS.

It is unfortunate that in an era when many conclusions are necessarily dependent upon statistical computations, a neglect of technical mathematical training often vitiates both a writer's deductions and his reader's apprehension of them. So common is this sort of ignorance, even in otherwise educated circles, that, outside of a comparatively small coterie of cautious, and especially cultivated algebraists, the civilized population is about equally divided between those who sneeringly remark that "figures can be made to prove anything," and those who overconfidently derive preposterous fallacies from insufficient data. In no pursuit is unintentionally false logic more mischievous in its results than in that of medicine, and we therefore offer no apology for presenting certain facts which, if

¹ Archiv. für Psychiatric, xx, 3.

they be tediously familiar to a choice few of our readers, may be useful to the majority.

Despite the popular proverb, figures will not lie if they be properly interrogated; but the accuracy of their response will be proportional to their multitude, and the interpretation of their oracles must be guided by a knowledge of the law of such proportion. Argument is hardly needed to show the unreliability of percentages drawn from a very small number of data: No sane person, having seen but four cases of a rare disease, two of which were fatal, would assume that the average mortality of the malady would always be 50 per cent., but many people fail to consider that a similar, though constantly diminishing, margin of uncertainty pertains to increasingly numerous groups of figures.

To determine this "possible limit of error," several formulæ—all leading to the same result—are given in treatises on statistics; the simplest being that of Poison, namely: If q represent the total number of observed cases, and p the number of the particular class of which it is desired to calculate the proportion as a clue to the probable general average, the "limit of error"

will be $2\sqrt{\frac{2p[q-p]}{q^3}}$ or, what is the same thing,

$\sqrt{\frac{8p[q-p]}{q^3}}$ Applying this rule, and adhering

for the present to rates of mortality, it will be found that if our record comprise 100 persons, with 10 deaths, the error-margin is 8:48, so that, instead of 10 per cent., successive groups of 100 may yield as much as 18.48, or as little as 1.5 per cent.; if our total be 200, with 20 deaths, the possible error is 6, and the general average may vary between 16 and 4 per cent.; with 500 persons and 50 deaths, the allowance is 3.8, and the possible variation of subsequent percentages from 13.8 to 6.2; if we have as many as 1,000, with 10 per cent. of deaths, a second thousand may give a rate of 12.7 or 7.3; and it is not until we reach a total of 10,000 that the limit of error is reduced to less than 1. Of course, the extent of the possible error will vary with the value p in the equation, even when q remains constant. Nescience in this respect renders worse than worthless—because misleading—many painstaking contributions to medical literature, and invalidates, a large part of the work industriously done in the domain of vital statistics. If a sur-

geon perform a novel operation on forty patients, of whom thirty-two recover, he is apt to announce—and to believe—that his procedure reduces the mortality of such-or-such a grave disease to 20 per cent., unconscious that his own figures intimate that of his next series of forty, fifteen may die, or all survive. Estimates of the movement of population in minor communities; "experience tables" of life assurance companies; in short, all prognostications of averages based on finite numbers, require correction according to the rule above defined, and only he who knows just how many "grains of salt" to season them wherewith can profitably digest them.

THE GERMICIDAL ACTION OF BLOOD.

The explorations in science are carried on with the greatest vigor in different directions at different times. It is now over three years since Metschnikoff promulgated his phagocyte theory. During this time it has met with the greatest opposition. NUTTAL and BUCHNER¹ have added materially to our knowledge of the germicidal action of blood. Both defibrinated and freshly-drawn blood manifest a decidedly deadly action upon bacteria for more than four hours after it has been drawn from the body. This is most marked toward the pathogenic bacteria. For example, the number of anthrax bacilli in a given quantity of material was reduced in two hours from 4,800 to 56 by being mixed in a test-tube with defibrinated blood; and three hours later only three living bacilli remained. Almost as remarkable a germicidal influence was manifested toward other pathogenic bacteria. The destruction of putrefactive bacteria is, however, much less marked, and against some of them, at least, the blood manifested little germicidal influence. This is in accord with the latest ideas of the origin of parasitism.

These investigations open up a new field of inquiry and thought which promises a reorganization of our ideas of infection. We are brought back to consider the animal body a colony of individual cells, the integrity of which when attacked by parasitic bacteria depends upon the issue of the struggle for existence between individuals of the invading parasites and the individual cells of the body.

¹ Ueber die bakterientödtende Wirkung des zellenfreien Blutserums. Centralblatt für Bakteriologie und Parasitenkunde. V. Band, No. 25, page 817, et seq.

EDITORIAL NOTES.

HOME.

FACULTY CHANGES.—The Toledo Medical College have elected Dr. J. T. Woods, formerly Professor of Physiology in the Cleveland Medical College, to the chair of Orthopædic Surgery; Dr. F. B. Robinson, of Grand Rapids, Wis., to the chair of Anatomy; and Dr. H. G. Blaine, Editor of *The Medical Compend*, lecturer on Diseases of the Nervous System.

CANADIAN MEDICAL ASSOCIATION.—The annual meeting of this Association recently held at Banff, was a very successful one. The work was good and the papers creditable. Dr. James Ross, of Toronto, was elected President, and the next meeting will be held in the latter city.

COLUMBUS MEDICAL COLLEGE.—The Secretary of this College, Dr. J. M. Dunham, writes us that they require and make examinations of students, before entrance, in literary attainments. It was not so stated in the table in our Special Edition of May 25.

TRANSACTIONS OF THE AMERICAN MEDICAL ASSOCIATION.—Any member of the Association desirous of procuring volumes of the Transactions from 1844-82 at a reduced price, can do so by addressing the Business Department of *THE JOURNAL*.

THE AMERICAN DENTAL ASSOCIATION.—This Association concluded its sessions at Saratoga on the 9th inst. after electing the following officers: President, Dr. M. W. Foster, of Baltimore, Md.; first Vice-President, Dr. A. W. Harlan, of Chicago; second Vice-President, Dr. J. D. Patterson, of Kansas City, Mo.; Recording Secretary, Dr. George H. Cushing; Corresponding Secretary, Dr. Fred Levy, of Newark, N. J.; Treasurer, Dr. A. H. Fuller, of St. Louis, Mo. The Association will meet at Excelsior Springs, near Kansas City, next year.

A NOTE OF WARNING.—Dr. R. Harvey Reed, Health Officer at Mansfield, O., has communicated the following to the *Mansfield Daily News*: "In view of the fact that the use of the so-called 'Elixir of Life' (which consists in injecting under the skin the raw liquid obtained from crushing and expressing the juice of the fresh testicles of the lamb or other animal) has developed a marked case of erysipelas in our city, which disease was

clearly traceable to the use of this liquid, and developed from the punctures where said liquid was injected, until almost the whole of both forearms were involved, which was accompanied by a chill, vomiting, fever and a rapid pulse, with marked redness and swelling of both forearms; and in view of the fact that numerous other cases of erysipelas and blood-poisoning have been reported occurring from the use of this liquid, saying nothing of several deaths occurring from its use, which clearly demonstrate that its use is attended with danger to the public health, it therefore becomes our duty to warn the public of the danger attending its use. . . ."

We learn that, since the issue of the above, the man has an abscess at each of the punctures, three on the right and two on the left arm, and one on the right leg. Dr. Reed lanced them and they yielded from $\frac{1}{2}$ to 1 oz. each of unhealthy pus, and after all giving no relief whatever for his chronic troubles.

AMERICAN PEDIATRIC SOCIETY.—The meetings of this Society are announced to take place at the Army Museum Building, Washington, D. C., September 20 and 21. One of the afternoon meetings will be held in the Johns Hopkins Hospital, Baltimore, Md., by invitation of the Director of that Hospital. A large number of papers have been promised. Dr. A. Jacobi is the President, and Dr. Thos. L. Latimer, Chairman of Committee of Arrangements.

PREVENTION OF TYPHOID FEVER.—The State Board of Health of Kentucky has issued a circular to the health officials and people of the State impressing upon them the necessity of preventive measures to stop the gradually increasing prevalence of, and mortality from, typhoid fever. The circular goes on to say:

Two methods of prevention, having the same general object in view, are to be recommended. The first involves the thorough disinfection of all discharges from the bowels of typhoid fever patients. This is best done by the use of a solution of chloride of lime, 8 ozs. to the gallon of water, using a quart of this solution for each discharge, and allowing it to stand in the vessel at least one hour before emptying. A solution of corrosive sublimate, 2 drachms to the gallon of water, will answer the same purpose, but requires to remain longer in contact with the material to be

disinfected. Bed and body linen soiled by such patients should be disinfected by the use of the same solution or by boiling.

The second method relates to avoiding the use of suspicious water, and especially well water, and where this cannot be done, to boil such water before it is used for drinking purposes. In the absence of a pure and well guarded public water supply, properly stored cistern water is probably open to least objection.

The effectual practice of these methods will require intelligent care and some expense, but it is confidently believed that their general adoption would result in the practical disappearance of a disease which is not only a disgrace to our civilization, but an annual scourge and tax upon the people of Kentucky, in comparison with which yellow fever and cholera sink into insignificance.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.—The annual meeting of this Association will be held in Evansville, Ind., on the 10th, 11th and 12th of September. The officers for this year are: President, Dr. Geo. J. Cook, Indianapolis; Vice-Presidents, Dr. J. A. Larrabee, Louisville, and Dr. J. D. Griffiths, Kansas City; Secretary, Dr. R. L. Thompson, St. Louis; Treasurer, C. W. Chapman, Toledo, O.; Committee of Arrangements, Dr. Edwin Walker, Dr. Lud Worsham, Dr. Charles Knap, with Dr. A. M. Owen, Chairman; Dr. C. P. Bacon, Chairman Committee of Arrangements, and Dr. Geo. P. Hodson, Chairman of the Committee on Exhibits.

Traffic Manager J. G. Grammer, who is Chairman of the Committee on Transportation, has succeeded in securing a one and one-third rate on all the roads in the Ohio and Mississippi valleys, which insures a large attendance.

This organization is the outgrowth of what was formerly the Tri-State Medical Association, which at first only included Indiana, Illinois and Kentucky, but its usefulness to the profession has become so great that it was found necessary to enlarge its territory, and as it is now constituted, is second only in importance and numbers to the American Medical Association, to which it is auxiliary and subordinate.

This Association is rapidly attaining the object of its formation—a thorough organization of the members of the regular profession of the entire Mississippi Valley, thus to foster, advance and

disseminate medical knowledge, to uphold the honor, and to maintain the dignity of the medical profession.

Last year members in the Gulf States were unable to attend on account of the yellow fever quarantine. This year nothing will hinder a full attendance from all sections of the country, as questions of importance to the entire profession of the South and West will be before the Association for consideration.

The importance of this Association in bringing together the members of the profession within this territory must be apparent to everyone, as there are many interests in common and individual welfare that can best be promoted by the advancement of the interests of all.

The preliminary programme contains a list of ninety-seven papers. It is expected about 800 members will be in attendance.

THE ADDRESS OF CLAUDIUS G. WHEELHOUSE, F.R.C.S., PRESIDENT OF THE BRITISH MEDICAL ASSOCIATION.—By special courtesy we were able to present to our readers in *THE JOURNAL* of August 24 the address of the President of the British Medical Association, which was delivered at its annual meeting, August 13, 1889. We are confident that it has been read with special interest. We only regret that the limited space at command did not permit us to publish it entire. His able review of the progress of medicine during the last century is alike interesting to its readers in Europe and America.

OMISSION.—In the report of the Section of Ophthalmology, it omitted to state that the paper submitted by Dr. F. C. Hotz, of Chicago, was read by title and referred for publication. It will appear in its order in *THE JOURNAL*.

THE AMERICAN PUBLIC HEALTH ASSOCIATION will hold its seventeenth Annual Meeting at Brooklyn, N. Y., on Oct. 22, 23, 24 and 25, 1889.

DR. J. SOLIS-COHEN, of Philadelphia, was recently elected Honorary Fellow of the British Laryngological and Rhinological Association.

THE Sanitary News draws attention to the fact that silk thread is soaked in acetate of lead to increase its weight, and persons who pass it through the mouth in threading needles, and then biting it off with the teeth, have suffered from lead poisoning.

TOPICS OF THE WEEK.

MEDICAL JURISPRUDENCE. CASES RECENTLY ADJUDGED.

Drunkenness.—Voluntary drunkenness which precludes a comprehension of the nature of the act, or recognition of the person killed, is no excuse for murder; but *mania a potu*, or any insanity or permanent unsoundness of mind resulting from the use of intoxicating liquors, will exempt one who commits a murder from punishment therefor. *Beck v. State*, 76, Ga. 452.

Employment.—A physician employed by the conductor of a train to care for a man injured by the train can recover against the railroad company for his services if, after knowledge or his employment by the conductor, the company failed to notify him that it would not be responsible. *Terre Haute & I. R. Co. v. Stockwell* (Ind.) 20 N. East. 650.

Expert.—When a medical expert is asked to give his professional opinion to a jury, not upon matters within his own knowledge, but upon an hypothetical case founded upon the testimony of witnesses previously examined in the case, the questions to him must be so shaped as to give him no occasion to mentally draw his conclusion from the whole evidence, or a part thereof, and from these conclusions, so drawn, express his opinion, or to decide as to the weight of evidence or the credibility of witnesses; and his answers must be such as not to involve any such conclusion so drawn, or any opinion of the expert as to the weight of the evidence or the credibility of witnesses. *Kerr v. Lunsford* (W. Va.) 2 L. R. A. 668, 8 S. E. 493.

The opinion of medical experts, founded on testimony already in the case, can only be given on an hypothetical case; and the hypothesis must be clearly stated, so that the jury may know with certainty upon precisely what state of assumed facts the expert bases his opinion. *Id.*

In putting hypothetical questions to expert witnesses, counsel may assume the facts in accordance with their theory of them. It is not essential that he state the facts as they exist, but the hypothesis should be based on a state of facts which the evidence in the cause tends to prove. *Id.*

The opinion of an expert witness as to the nature and extent of an injury to a person is not inadmissible because based in part on the statements of the injured person. *Louisville, N. A. & C. R. Co. v. Snider* (Ind.) 20, N. East. 284.

Insanity.—Insanity is a fact that cannot be proven by reputation, or by a witness who is not an expert, unless he first gives the facts upon which his opinion is based. *Grubb v. State* (Ind.) 20 N. East. 257.

Where there is an issue made as to sanity, and evidence is introduced under it tending to show insanity, there is no presumption to be indulged one way or the other. *Missouri Pac. R. Co. v. Brazil* (Tex.) 10 S. W. 403.

A defendant in a criminal case who raises the defense of insanity must prove it by a preponderance of evidence; and this applies as well to the causal connection between the fact of insanity and the crime committed as to the insanity itself. *Gunter v. State*, 83 Ala. 96.

A person, though of weak mind, but with sufficient capacity to distinguish right from wrong in respect to the particular acts charged, is accountable for his acts, and the plea of insanity will be unavailing as a defence for crime. *Anderson v. State* (Neb.) 41 N. W. 357.

An instruction as follows: "If you believe from the evidence that defendant fired the shot that caused the death of the deceased, and that, at the time of the controversy, defendant was in such a mental condition as to distinguish the difference between right and wrong, then he was responsible for his act, and you must convict," is erroneous, as it does not, standing alone, state a correct legal proposition. *Kearney v. People*, 11 Colo. 258.

Moral insanity, as distinguished from mental derangements, is not an excuse for crime, and does not exempt from punishment therefor. *People v. Kerrigan*, 73 Cal. 222.

Malpractice.—In an action against a physician, based on his lack of care or skill, the burden of proof to show such lack is on the plaintiff. *State Jeuney v. Housekeeper* (Md.) 2 L. R. A. 587, 19 Md. L. J. 917, 16 Atl. 382.

The party who allows a surgical operation to be performed is presumed to have employed the surgeon for that purpose, and the burden of proof to show lack of consent is on the party alleging it. *Id.*

If physicians attending a woman deem it necessary, for the preservation and prolongation of her life, to perform an operation, they are justified in doing so if she consents, whether her husband consents or not. *Id.*

The degree of care and skill required of physicians is that reasonable degree of care and skill which physicians ordinarily exercise in the treatment of their patients. *Id.* --EWELL in *North American Practitioner*

SPLENECTOMY.

A successful case of splenectomy for enlargement and displacement of the organ is reported by Sir Spencer Wells. The patient was a young married woman, aged 21, who had suffered from ague when a child. Soon after her marriage, an abdominal tumor which she had had for several years began to enlarge, and was thought to be connected with the left ovary. It continued to increase in size till it lay in front of the uterus, extending from the pubes to the umbilicus, and measuring 9 inches transversely. Sir Spencer Wells diagnosed it to be an enlarged displaced spleen. After an attack of peritonitis, which was judged to be due to hæmorrhage into the spleen substance, the tumor was aspirated, 10 pints of thick reddish-brown fluid being drawn off. Microscopically this was found to contain mainly broken-down red blood corpuscles and numerous leucocytes. As the fluid quickly reaccumulated, and the patient's condition became critical, Sir Spencer removed the tumor on May 13, 1888. During the operation the cyst wall ruptured, and a large quantity of fluid, similar to that withdrawn by aspiration, rushed out. The solid part of the tumor, consisting of hypertrophied spleen tissue, weighed 4 lbs. There were extensive adhesions to intestines, uterus, etc. One part in front was so firmly adherent that it was decided to leave a portion of the cyst wall, measuring 3 to 4 inches from above downwards, 2 to 3 from side to side, and $\frac{1}{4}$ inch

in thickness. Sir Spencer Wells decided not to drain, and after securing the splenic vessels with silk ligatures stitched up the wound with fine silk, including sac wall, peritoneum and integument. The operation, which lasted fifty minutes, was performed under carbolic spray, and the wound was dressed antiseptically; scarcely any blood was lost from the splenic pulp, but the patient was much exhausted after the operation. The wound had to be partly reopened a week later to give exit to pent-up discharge. The pus-forming cavity did not communicate with the peritoneum. Strict antiseptic precautions were employed and the sac gradually contracted into a sinus. On July 22 she was perfectly well and only a small superficial sore remained. A year after the operation she continued well, and could exert herself in any way as well as ever. The abdominal cicatrix was firm and nothing abnormal could be discovered either in the abdomen or the pelvis. A report by Dr. Dreschfeld on the blood, dated June 27, 1889, more than a year after the operation, states that on microscopical examination it appeared perfectly normal. The red corpuscles were of normal size and appearance; the leucocytes were of normal size and were present in normal proportion. The quantity of hæmoglobin was between 75 and 80 per cent.—*London Medical Recorder*.

ON SUPRA-VAGINAL AMPUTATION OF THE UTERUS.

Dr. Petr. A. Rakuza, of Odessa, Russia, has made the operation in twelve cases. In nine it was resorted to on account of uterine fibro-myomata; in a tenth case on account of hæmatometra with hæmoatsalpinx and hæmatocolpus; in an eleventh the amputation became necessary in the course of an unusually difficult double ovariectomy, where there were met with extensive and extremely dense adhesions of cysts with the broad ligaments and womb; in the remaining case, Porro's Cæsarean section for osteo-sarcoma of the pelvis and femur was performed. In seven cases the operation was made after an extra-peritoneal method (first described by Kleberg in 1875), all the patients making good recovery. In the other five cases, an intra-peritoneal operation was performed, with three recoveries and two deaths from peritonitis. Dr. Rakuza's general deductions are these: 1. The extra-peritoneal method gives by far better results than the intra-peritoneal. 2. Even under strictest antiseptic precautions the intra-peritoneal amputation is always associated with the danger of a secondary infection (through the cervical canal). 3. The operation is justified only in cases of pedunculated fibroids and in such ones where the stump is very short.—*Transactions of the Third General Meeting of Russian Medical Men at St. Petersburg, 1889, No. 10.*

CHINESE DOCTORS.

Tcheng-Ki-Tong, a high military mandarin, has been edifying the world with some remarkable illustrations of the esteem in which native physicians are held in China. One of them having advertised that he had an infallible remedy for curvature of the spine, a hunchback applied to him and asked if he could straighten his back. The doctor undertook to do so, and placed the unfortunate patient on his back on a flat board. He then placed a

similar board on his chest and abdomen, and loaded it with heavy weights and stones. The result of this novel orthopædic surgery was that the patient was straightened out so effectually that he died on the spot. The quack claimed his fees on the ground that he had kept his promise; the bargain was that he should straighten his patient's back, but nothing had been said about his life! In China, it appears, the distinction between physicians and surgeons is more sharply defined than with us, and every man is expected to stick to his own branch of the profession. A rich merchant was struck by an arrow, which remained in the wound. The principal surgeon of the place was sent for, and after insisting on pocketing his fee in advance cut off the projecting end of the arrow, leaving the point buried in the patient's body. On being asked to extract it, he said medical etiquette would not allow him to trespass on a brother practitioner's province; the arrow being inside the body, the case was clearly one for a physician! An old Chinaman gave the following practical advice as to how to find the most eminent doctor in a strange place: "Count the number of ghosts crouching about the doctor's doorsteps; the one most in vogue has always the largest number."—*London Medical Recorder*.

TO PUNISH DRUNKARDS.

The Legislature of Minnesota at its last session, apparently realizing the failure of its high license enactment of a few years ago, ostensibly for the prevention of drunkenness, but in reality authorizing the means by which it may be privileged, passed a law to punish drunkards. The new law provides a fine of not less than \$10, nor more than \$30, or by imprisonment for not less than ten, nor more than forty days. For the second offense, by imprisonment for not less than thirty, nor more than sixty days, or by a fine of not less than \$20, nor more than \$50. For the third or all subsequent offenses, by imprisonment for not less than sixty days nor more than ninety days.

It is to be hoped that this law will be vigorously enforced. *The Sanitarian* has constantly maintained that the true criminal is he who gets drunk; and that it is no more reasonable to hold the liquor seller guilty of promoting drunkenness than it would be to hold the grocer guilty of promoting theft because his goods are sometimes stolen. Make drunkards odious and cease pampering them as unfortunates and encouraging them to hold other persons responsible for their sins, and drunkenness will speedily go out of fashion.—*The Sanitarian*.

A SECOND EDITION OF THE SIAMESE TWINS.

The Weekly Medical Review says: "From Wabash, Ind., is reported the birth of female twins inseparably connected at the hips and lower part of the abdomen. There is a head for each of the two bodies, and enough legs to go around; these protrude from each side of the body where the trunks are connected at the hips. The spinal column is continuous throughout, but no other vital organs are connected. Each child breathes, pulsates, and is nourished independently of the other. Both have free use of their respective limbs. Their joint weight is 12 lbs., and they are plump and hearty."

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

*Stated Meeting, February 13, 1889.*THOMAS E. MCARDLE, VICE-PRESIDENT, M.D.,
IN THE CHAIR.

REPORT OF MICROSCOPICAL COMMITTEE.

The Committee on Microscopy reported that the supposed gall stones presented by Dr. Hoehling were examined chemically and microscopically, and found with one exception to be true gall stones.

The growths of the uterus presented by Dr. J. T. Johnson, January 16, were myofibroma. The ovary presented at the same meeting was in a state of cystic degeneration. The portion of uterus presented by him February 6, can be described as a fibromyoma. The part projecting into the cavity of the uterus was in a state of inflammation and ulceration.

DR. GEORGE N. ACKER presented the following case and specimen :

HYDRONEPHROSIS IN A CHILD.

Willie Smith, æt. 5, colored ; father and mother living. Child has never been well since birth, has always been small for age, and emaciated. About one month ago was taken with a bad cold, and cough. The cough has continued up to the time of admission, and the child has gradually become more emaciated.

Present condition January 23 : General appearance, very much emaciated, looks as if he might be 3 years old instead of 5. Has a marked phimosis. Temperature 97.4°. Has a dry hacking cough, no expectoration. Diminished resonance over both lungs anteriorly, more particularly on left. Large and small moist râles over both lungs anteriorly and posteriorly. Tongue coated white, great thirst, ravenous appetite, seems to be somewhat constipated. Abdomen pendulous and tympanitic.

24th. Temperature at 11 A.M., 103°. Feet swollen and œdematous.

25th. Vomited undigested milk, temperature ranges from 99° to 102.5°.

26th. Œdema of feet and legs diminished, abdomen less distended.

27th. Temperature ranges from 100.5° to 102.5°.

29th. Abdomen much more distended, has vomited milk three times in last twelve hours. Temp. at 9 A.M. 104.2°.

30th. At 10 30 A.M., temperature 106.

31st. Has vomited twice in last twenty-four hours. Has been passing for past three or four days, an unusually large quantity of urine. Chemical and microscopical tests show it to be normal. Also has slight diarrhœa.

February, 1st. Temperature ranges from 101° to 102.2°; three passages from bowels to-day.

2d. Temperature ranges from 100° to 101°.

3d. Very weak, temperature ranges from 99.5° to 102.8°, pulse too weak to be counted.

4th. Died at 3 A.M. from exhaustion.

Necropsy held eight hours after death. Rigor mortis, slight. General appearance very much emaciated, abdomen enormously distended. On opening the chest a considerable quantity of sero-purulent fluid escaped from the pleural cavity, left side. The left lung was thickly studded throughout with tuberculous masses, the upper lobe being entirely consolidated. A few tubercles were found in the right lung ; the right lung was also in a state of chronic hyperæmia. An abnormal quantity of fluid was found in the pericardium. The liver was uniformly enlarged, small caseous masses were discovered at the junction of pancreatic duct with the duodenum. Both ureters were dilated, and contained a considerable quantity of urine. Numerous tubercular masses were found over external surface of spleen.

Up to within four days of patient's death, he seemed to be very bright, and free from pain. During his entire stay in hospital he passed a large amount of urine. During the last four days of his illness he seemed to be in great pain.

DR. BERMAN did not think that this was a case of hydronephrosis as there were no symptoms recognized during life indicating disease of the kidneys, and the microscopic appearances would not indicate degeneration of these organs. The child died of tuberculosis, the post-mortem revealed a dilatation of the ureters and hydronephrosis is diagnosed. Is the name justified by the dilated condition of the ureters? He did not think so, although Dr. Acker accepted the diagnosis on the authority of Dr. Lamb.

DR. THOMPSON : Was there any cause in the bladder or urethra to account for the dilatation of the ureters.

DR. LAMB had presented about a year ago a specimen of dilatation of the ureter in a newborn child. Dr. Acker's case was undoubtedly congenital hydronephrosis. The opening in the bladder was normal, and the bladder itself was thick but not diseased. The trouble was above the bladder. There was a constriction of either ureter just below the kidney, but no obstruction. The pelvis of the kidney was dilated and the pyramids flattened. This is what the books call hydronephrosis. This was the second case he had seen.

DR. THOMPSON : Would there not be a cause for a congenital condition of this kind?

DR. LAMB : As a rule, no obstruction is found. None was found in either of the two cases he had seen.

DR. THOMPSON : Congenital deformity expresses a fact but not a pathological fact. There

must be a cause for such conditions. He gave the case of a man, *æt.* 50, whose ureter was distended to the size of the large intestine. He had examined the opening into the bladder, but the probe passed through it. He concluded that there must have been a valvular opening of the ureter into the bladder causing backward pressure. After death a probe may pass through many such openings, although there may have been an obstruction during life.

DR. A. F. A. KING: How are we to know that there was not a congenital stricture of the urethra since that canal was not examined? The bladder has ruptured from congenital stricture of the urethra. If there had been a stricture of the urethra the dilatation of the ureters could be easily accounted for by the backward pressure of the urine.

DR. BERMANN objected to the term used, but would ask Dr. Lamb, assuming that there was no hydronephrosis, what he would call a case with such a dilatation of the ureters?

DR. LAMB: This is what the books call hydronephrosis.

DR. BERMANN would call it dilatation of the ureters.

DR. KING: The post-mortem appearances show no evidences of obstruction of the ureter below the dilatation. There may have been some pressure exerted during foetal life causing obstruction and dilatation; after birth, the pressure being removed, the obstruction would disappear and the ureters remain dilated.

DR. LOVEJOY: If we accepted Dr. King's belief that the obstruction existed at the neck of the bladder or in the upper part of the urethra, how could we account for the dilatation of the ureters as far as one inch from the kidneys at the seat of the constriction? The dilatation should be above the obstruction and not below it.

DR. KING: One part of the ureter may be more dilatable than another.

DR. ACKER accepted the diagnosis of hydronephrosis because the kidneys were softened and the ureters were distended to the size of the colon.

DR. D. S. LAMB presented two cases of

INTRA-CRANIAL HÆMORRHAGE, WITH SPECIMENS.

This specimen consists of the lower half of the brain, showing a dark blood clot under the arachnoid membrane covering the pons varolii and medulla oblongata, and extending forwards over crura cerebri, intercrural parts and posterior portion of orbital lobes.

The patient was a white woman, single, *æt.* 19, who was said to have been struck on the back of the head with the blunt end of an axe. Some time afterwards she was admitted to hospital with double phlyctenular keratitis and conjunctivitis; marked headache, photophobia; the headache

was frontal, intense at times, but thought to be due to the disease of the eyes. She had also hip-joint disease, not however, requiring treatment. She recovered from the disease of the eyes and was discharged. Had had no symptom suggesting disease of brain. She then went into the Women's Christian Association Home, and made no particular complaint till December 3. When after a few hours' nausea, faintness and staggering movements, she died. Attended by Dr. Mary Parsons.

The post-mortem examination by Dr. Lamb showed the condition described in the specimens; also the following: Face pale; no scar on scalp; no injury to bone; adhesion of dura mater to skull only ordinary; but there were several long bands of adhesion of pia mater to tentorium cerebelli on right side; and the pia mater was congested. The blood described extended into the 4th ventricle and down the spinal canal as far as could be seen from the cavity of the skull. There was bloody serum in the lateral ventricles. Both lungs contained bloody serum. The heart was somewhat enlarged; the aortic and mitral valves slightly thickened. Ascending aorta showed a large atheromatous patch. Liver congested, spleen, stomach and intestines normal, kidneys normal and bladder full. The inner surface of the mouth of the uterus showed a fringe-like growth, and the cavity contained muco-pus. Ovaries enlarged; in the right was a large cavity containing blood; its inner surface ridged; the wall very thin and ruptured in handling. The left ovary was thickened; cortex contained many large cysts filled with white granular matter.

The next specimen consists of the lower half of the brain showing large clots in the right cerebral hemisphere; the hæmorrhage has caused extensive laceration, involving the frontal, parietal and occipital lobes, corpus striatum and thalamus opticus; but opening into the lateral ventricle only through the anterior part of the corpus striatum; the blood thence finding its way into the left ventricle through the foramen of Monro.

The patient was a colored man, *æt.* 52; had been a widower, but was married just a week before he had a stroke of paralysis. He was a large muscular man with thick neck; medium height and about 180 lbs. weight. He had eaten heartily on the evening of December 5. The next morning he was found in a stupor, from which he was aroused with difficulty; respiration stertorous; there were spasmodic movements of the right arm; right side of face paralyzed; left side of body also; pupils dilated and insensible to light; dysphagia; unable to protrude his tongue; tenderness on right side of neck aggravated by movement of head; urination involuntary; constipation; speech thick. Pulse at first full and quick; afterwards weak and frequent.

He died eight days after seizure. His mother had died of apoplexy; a sister from softening of brain. He was an inveterate smoker; used stimulants in moderation. Attended by Dr. S. R. Watts.

These typical specimens are presented for contrast. The hæmorrhage into the substance of the brain in the one case, that of the old man; and into the membranes in the other, that of the young woman. In both cases the accident was caused doubtless by rupture of a diseased blood-vessel. But the cause of the disease of the blood-vessel was probably different in the two cases.

In that of cerebral hæmorrhage, there is a history which seems to show a hereditary tendency to disease of blood-vessels; the mother died of apoplexy, a daughter, of softening of brain. Probably also we should give some credit to the man's plethoric habit as a predisposing cause, although such a cause is disputed. How far an inveterate habit of smoking may produce disease of blood-vessels of the brain is an interesting question. The absence of symptoms suggesting disease of thoracic or abdominal viscera was the reason for not including these in the examination; it is possible that there was some disease of heart or blood-vessels of those cavities. It seems altogether likely that the rupture of the diseased vessel in the brain was induced by the sudden fulness and pressure following a hearty meal, especially as the man went to sleep soon afterwards. It is worthy of note that the hæmorrhage took place into the brain substance just outside the corpus striatum, the usual situation. To the naked eye the large vessels appear normal; the degeneration, probably fatty, I presume involves only the minute vessels.

In the case of the young woman, there is to the naked eye also no appearance of disease of blood-vessels; but we can hardly doubt that there is disease. There is no history of hereditary tendency, either positive or negative. But there was marked atheroma of the ascending aorta; and the heart was somewhat enlarged and its valves thickened; there was also old hip-joint disease. It is easy to believe, therefore, that there was some disease of the blood-vessels of the brain and membranes, possibly cerebral aneurism, which is said to occur oftener in children between 10 and 20 years of age than at any other period of life. I am unable to trace any connection between the reputed injury received and this hæmorrhage, although quite ready to believe that there may have been some connection.

I did not mutilate the specimens to ascertain the particular vessel involved in each case, because it is so seldom that the vessel can be found even with the greatest painstaking.

DR. THOMPSON was surprised that one of these cases did not have paralysis, and could only account for the absence of such symptoms by the

fact that the patient did not live long enough for them to be recognized.

DR. MARY PARSONS: The patient screamed and staggered to the bath room, and then lost the use of her limbs. She was conscious and talked rationally up to five minutes of her death.

DR. A. A. HOEHLING, U. S. N., presented a specimen of

TAPE-WORM.

The patient, a marine, aged 24 years, native of Chicago, Ill., enlisted last November; so that he probably had the worm before he entered the service. First passed segments of the worm about January 21, 1889, and has never felt a bad symptom from its presence. On February 6, after breakfast, he was told to eat nothing more until his treatment should have taken place. That night he was given 10 grains of blue mass. At 11 o'clock on February 7 he took 15 grains of the oleo-resin of male fern every 15 minutes until he had taken eight doses; in all 3 ij. In an hour after the last dose of male fern he was given one ounce of castor oil. That afternoon he had four stools, and passed this worm in divided sections. A good deal of the smallest section, near the neck, has been found; but the slender inch of real neck and the pin-head sized head have not been discovered. Flint tells us that the head is rarely found after treatment for tape-worm, but that if the worm breaks off very near the head there is not enough body left to nourish the remainder, and a cure is accomplished. Strümpel says that in attempts to pull the worm away from the bowel where the head fastens itself to the mucous membrane, there is usually a separation caused near the neck and the head remains clinging to the spot of its attachment. I have treated about six men for this complaint, and have not seen the head of the worm yet. This specimen I believe to be of the variety known as the *tenia solium*. As I have usually been the shipmate of my patients for two or three years, I have had the opportunity to observe that tape-worm has a decided tendency to reappear, even after two or three lots of segments have been gotten rid of by treatment in the course of a cruise.

DR. A. A. HOEHLING, U. S. N., read a paper on THE OLIVE OIL TREATMENT OF HEPATIC COLIC.

Prof. H. W. Wiley, of this city, tells us in *The Medical News*, of July 28, 1888, that "Dastre, in a recent study of the action of the bile in fat digestion (*Comptes Rendus*, tome 106, p. 217) has shown that the pancreatic juice alone is not capable of digesting fats;" also that "these conclusions of Dastre have just been confirmed by the experiments of Prevost and Binet (*Comptes Rendus*, June 11, 1888, p. 1690). These investigators find that in dogs, when the bile is prevented from taking part in digestion, fat foods are voided unchanged."

In "Dalton's Treatise on Human Physiology," seventh edition, pages 181 and 182, it is stated that "the bile passes into the duodenum in much the largest quantity immediately after feeding. During the intervals of digestion it accumulates in the gall-bladder: and in animals which have been for some time without food the gall-bladder is usually distended with bile, while in those killed immediately or soon after feeding it is comparatively empty. At the commencement of digestion it is excited to contraction, causing a sudden flow of bile into the duodenum. After that time the discharge remains nearly constant."

Admitting all of the statements just quoted to be proven, we can formulate an explanation of the *modus operandi* of large doses of bland oils in removing gall-stones from the ducts in which they have been arrested. *Physiological action causes the removal of the obstruction.* What is more likely than that the ingestion of a large amount of one of the food oils should furnish a stimulus for the secretion of a proportion of bile relatively equal to the amount of oil to be digested? And would not this increased quantity of bile aid in the propulsion of the engaged gall-stone, firstly by lubricating it thoroughly, as well as by moistening completely the walls of the ducts which may be partially dry from occlusion of their lumen by the impacted gall-stone; and secondly, by the force of hydrostatic pressure from the proper direction for the expulsion of the calculus? Is it not probable that the contraction of the gall-bladder mentioned by Dalton, also adds to this hydrostatic pressure, both being called into play when the digestion of a large dose of oil begins?

We have then a force pushing the calculus from behind, the latter freshly moistened, and the ducts made more distensible by the new access of bile; and thus the stone reaches the duodenum. I might add that when, as is frequently the case, castor oil is given in these seizures there is no reason why the physiological actions just spoken of should not be called into play, and aid the therapeutical or purgative effects of the castor oil. We know that infants digest this oil very frequently, and therefore require a relatively large dose; and it is reasonable to suppose that adults also digest some of its bland portion.

We have empirical knowledge that attacks of hepatic colic have often been relieved by large doses of olive oil, and that in such cases solids have been voided that were regarded as true gall-stones. Dr. T. H. Streets, U. S. N., reports such a case in the *Medical Record* of April 14, 1888; in the *Medical News* of May 26, 1888, I reported a case in which prompt relief was afforded by olive oil, but no stone was found, nor was a close search made. On the other hand, Prof. D. W. Prentiss reports a case in the *Medical News* of May 12, 1888, in which relief was given

the patient, but the particles removed after large doses of cotton-seed oil were found to be soap, on examination by Dr. H. W. Wiley, as described in his article heretofore quoted.

Prof. R. T. Edes, in his text-book on "Materia Medica and Therapeutics," 1887, p. 287, speaks of the same sort of masses as "lumps of soap formed by the oil with the alkalies of the intestinal secretions." In conversation with Drs. Edes and Prentiss I learned that they do not deny that true gall-stones may be discharged during the treatment under consideration; but they take the position that semi-solid saponified masses of injected oil are sometimes passed, and that such substances have been mistaken for gall-stones.

DR. HOEHLING presented a case of

GALL-STONE COLIC TREATED BY THIS METHOD.

Henry T., marine, aged 46 years, native of Italy, was the patient who passed the gall-stones exhibited to the Society, and I am indebted to Dr. A. F. Magruder, U. S. N., for the notes of his case. He had his first attack of gall-stone colic Nov. 12. His bowels were opened by purgatives, and jaundice relieved in about two days, and he passed the two smaller gall-stones. No oil was given during this attack. On January 9 he had another acute attack of the same nature, lasting five hours, which was followed for several days by nausea and vomiting, with pain on pressure over the gall-bladder, abdominal tenderness and distension, and steadily increasing jaundice. Unable to procure a movement of his bowels until January 14, on which day he took about one quart of olive oil in divided doses, some of which he vomited up again, and in the afternoon his bowels were moved, attended by the passage of the two largest gall-stones that have been shown to the Society by me. His urine had become as dark as porter, and his skin looked a dark green. He had partaken of no food of any kind in four days, and had been troubled with singultus for twelve hours before his bowels were moved.

After the passage of the gall-stones he commenced to improve steadily, and he continues to do so. His wife states that during the olive-oil treatment he had a stool composed of "thick bile" after he had passed the calculi. She describes it as a gruel-like mass which would about fill a tea cup. We may well regard this grumous defecation as being a portion of the olive oil emulsified, or partially saponified, and discolored by biliary and fecal additions.

It is interesting to note that no semi-solid saponified lumps were found in this case, though a very large quantity of oil was taken. We might inquire how is the soap formed in those cases where it occurs. As many of these patients are early put upon an alkaline treatment I supposed that might account for the saponification: but experiments with a solution of bicarbonate of

soda added to olive oil in a vial, at the temperature of a warm room, did nothing to confirm this view. The alkalies found in the bowels never produce lumps of soap in a state of healthy digestion, so far as I am aware.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

The International Congress on Dermatology and Syphilography—The International Congress on Hypnotism—The International Congress on Mental Medicine.

Among the numerous International Congresses that are being held in Paris since the opening, in May last, of the Universal Exhibition, one of the most important is that on Dermatology and Syphilography. The meetings, which will extend from the 5th to the 9th of August, will be held at the Museum of the Hôpital St. Louis, than which, a more appropriate place could hardly have been selected for the purpose. The first meeting took place on the morning of the 5th inst., when more than 220 members, composed of French and foreigners, were present. Among the latter were the most distinguished dermatologists of their respective countries. This may be seen by citing the following names: Kaposi, Hans, Hebra, Neumann of Vienna, Malcolm, Morris, Hutchinson, Crocker of London, Duncan Bulkley of New York, Duhring of Philadelphia, Tarnowsky of St. Petersburg, Olavide of Madrid, Manassei of Rome, Zambaco of Constantinople. Besides Dr. Unna, other distinguished dermatologists of Germany sent in their adhesion to the Congress but, at the last moment, they all withdrew, why and wherefore, remains a mystery. This of course has been severely commented on by the French, and not without reason, as it cannot be said that such a proceeding on the part of the German *savants* was in good taste. However, in spite of this unpleasant incident, it is anticipated that the Congress will be a great success. The first meeting was presided over by M. Ricord, the illustrious syphilographer and octogenarian, who, notwithstanding his advanced age, expressed himself willing to preside, and in very suitable terms welcomed the foreign members of the Congress. He was naturally the object of a veritable ovation. M. Peyron, the Director-General of Public Assistance, retraced the history and origin of the museum from Devergie, its founder, to the present time, which he said was the finest museum of its kind in the world, and where dermatology may be studied as on the living subject. This is due to the consummate skill of M. Baretta, the eminent modeller, who is the author of the incomparable collection

now to be seen in this museum. The bureau was next constituted, and Dr. Hardy, the well-known dermatologist, was elected the actual President of the Congress.

Another Congress, not less interesting, is that on Hypnotism, which has been organized under the auspices of Drs. Dumontpallier of Paris, Grasset of Montpellier, Liégeois of Nancy, and Berillon of Paris. The Congress has for Presidents of Honor Drs. Charcot, Brown-Séquard, Azam, Brouardel, Charles Richet, Sombroso. The Congress is International, and will be devoted to experimental and therapeutic hypnotism. The first meeting took place on Thursday the 8th inst., and the Congress will continue in session until Monday the 12th inst. The meeting was well attended, and presided over by Dr. Dumontpallier. The following subjects will be discussed at the meetings: 1. Necessity for forbidding public exhibitions of hypnotism, by Dr. Ladame, of Geneva. 2. Relative value of the different processes intended to produce hypnotism and to increase suggestibility from a therapeutic point of view, by Professor Bornheim, of Nancy. 3. Indications of hypnotism and suggestion in the treatment of mental disease, by Dr. Voisin, of Paris. 4. Application of suggestion in the mental education of vicious or depraved children, by Dr. Berillon, of Paris. 5. Relations of suggestion and somnambulism to the law and to medical jurisprudence. Responsibility of those in hypnotic conditions, by Professor Liégeois, of Nancy. It will be seen that the programme is sufficiently interesting, but it is impossible to give even the summary of the discussions in an ordinary letter.

On Monday the 5th inst. the International Congress of Mental Medicine was opened in the large amphitheatre of the College of France, under the Presidency of Dr. Falret. Drs. Ball, of Paris, and Morel, of Brussels, were elected Vice-Presidents, and Dr. Ritti General Secretary. Dr. Falret read a report on the first question of the programme: Obsessions with consciousness (intellectual, emotive and instinctive). He said that it is not very long ago that the consciousness of a patient's state excluded the idea of a mental malady. However, Esquirol and Baillarger had already published observations of insanity with consciousness. Now-a-days, all physicians admit these singular morbid forms. Certain ideas, certain emotions, certain impulsions, take hold of a patient in an irresistible manner. He knows that they are false, deceiving and not natural, which he wishes to repel. He combats them, but they impose themselves on him in spite of himself. One patient cannot see a razor without wishing to cut his throat, another is beset with the idea of stealing; the latter is at the same time beset with the idea of homicide. These troubles, though varied, have the same character of being recog-

nized so far as concerns the consciousness of the patient and the domination of his will. Heredity here plays a rôle so essential that Magnan designated this form of insanity under the name of hereditary insanity. Others have named it insanity of degenerated subjects. It is remittent, with intervals of appeasement sufficiently long to lead one to believe in a permanent cure. It is never altogether isolated in its symptomatic manifestation, but it is accompanied with anguish, with doubt and varied emotive symptoms. On the contrary, it is never associated with hallucinations, it is not transformed into any other variety of mental aberration, it never ends in dementia, and it is only exceptionally that it is accompanied with the delirium of persecution or that of melancholy. The members of the Congress listened with great interest to the report of Dr. Morel, on the works of the delegates to the International Commission to establish the bases of a good International statistic of mental diseases. Dr. Morel proposed the following classification: 1, mania; 2, melancholia; 3, periodical insanity (a double form, etc.); 4, progressive systematized insanity; 5, insane dementia; 6, organic and senile dementia; 7, general paralysis; 8, neurotic insanity (hystero-epilepsy, hypochondriasis, etc.); 9, toxic insanity; 10, moral and impulsive insanity; 11, idiocy. A. B.

DOMESTIC CORRESPONDENCE.

Yellow Fever.

Audi Alteram Partem.

To the Editor:—I have just read a letter in THE JOURNAL for July 27, last, from S. Paulo, Brazil, about the yellow fever in Santos, Campinas, and other smaller places in the same Province, with a great deal of interest and attention, as I am in the position to bear testimony to its correctness, having been all the time of the late epidemic practicing in Rio de Janeiro, which also suffered at the same period; so much so that the fatal year, 1889, will not soon be forgotten there. I was in correspondence with a medical friend in S. Paulo who gave me a very graphic picture of the state of affairs there, and I shrewdly suspect that he is the author of the letter in THE JOURNAL; and as I know and esteem him as a competent observer of rigid impartiality, I think he will be obliged to me for explaining away an erroneous impression he seems to have imbibed from the defenders of Freire's preventive inoculation (or vaccinations, as he himself calls them) against yellow fever.

The paragraph I allude to is as follows: "It is to be regretted that the gentleman who was sent out here by our Government to investigate Dr.

Freire and his method could not have selected this season of the year for his studies, when yellow fever can always be found and Dr. Freire is always at home."

Now Dr. Sternberg was not sent to study yellow fever clinically, he having had ample experience of the disease in question during several epidemics. He went as an expert in bacteriology, and under definite orders, signed by the President of the United States, to study the *results* of the inoculations made by Dr. Freire, and it is the opinion of all impartial people who are familiar with this affair that he did it in a most thorough manner. Besides, *one* typical case of yellow fever would be enough to furnish material for Dr. Sternberg's investigations as to the universal existence of the pathogenic germ of Dr. Freire, and no one will deny that such a case can, unfortunately, be found at all seasons of the year in Rio de Janeiro, and that Dr. Sternberg found more than one case during his stay in Rio, and that he worked jointly with Freire in his laboratory. I, myself, was with him one day in Dr. Freire's laboratory, where I was shown a micrococcus said to be the germ in question, and once again at an apothecary's in Rua Conde d'Eu, when Dr. Freire inoculated three persons in our presence.

That is all, and I think I have said enough to stay opinions on Dr. Sternberg's proceedings until the publication of his forthcoming report, which will be ample and conclusive enough to set at rest this unhappy dispute, which up to to day has exhibited more violence than is admissible in a scientific discussion.

R. CLEARY, A.M., M.D.

Washington, D. C., August 19, 1889.

Ovarian Cyst, with Extensive Adhesions, in a Patient 80 Years of Age—Recovery.

To the Editor:—I send you the report of a case which I think will be of interest to the readers of THE JOURNAL, and hope it may be of use to others in similar cases in forming a favorable prognosis where age seems to contradict any operative procedure that may give the patient a chance of prolonging life.

Mrs. H., 80 years old, native of South Carolina, resident of Edisto Island. First seen by me July 2, 1889. Her weight at that time was 85 lbs., her general health bad. She insisted on my operating at once, strongly against my desire and advice—said life was a burden to her, assumed all the responsibility and preferred death under the operation, rather than to live any longer in her present condition. Four days later I made an exploratory incision in the median line, as usual, and about 6 inches in length. During the progress of the operation this incision was extended to the umbilicus. The entire peritoneal cavity was of a dark crimson hue, but there was no

lymph, pus, or ascitic fluid. The tumor, which was about the size of a foetal head at full term, was found to be firmly adherent to the intestines everywhere, except its upper surface. Not even the slightest space between the tumor and intestines could anywhere be discovered. There was no attachment to the uterus, bladder, or other abdominal viscera. Its enucleation was at once considered; but after separating a portion, in area equal to the surface of the palm of the hand, without discovering any lamination, but with the feeling that I was digging into solid tissues, instead of separating layers, I became alarmed lest I should make matters worse, and desisted. During the progress of the operation the abdominal viscera were protected by frequent applications of soft, warm cloths, wrung out in hot carbolized water. The natural heat of the body was maintained by keeping the temperature of the room at 80° F., and during the latter part of the operation, by also applying bottles of hot water to the patient's extremities. The patient was under chloroform sixty-five minutes.

The shock was great and left her in almost a dying condition; under hypodermatic injections of ether and atropin she rallied. The spray used was listerine 1 to 8, the instruments, sponges, etc., were kept immersed in a hot 2 per cent. solution of carbolic acid. The highest temperature reached was 101.5°, on the third day. The patient on the third night was given a suppository of ¼ gr. of morphia, after that she slept naturally without opiates. The day following the operation, a small quantity of milk was taken and readily assimilated. Nothing but milk and beef-tea was given till the eighth day, when chopped beef and cracker was allowed and well borne. The abdominal sutures, which were of silk, were removed on the sixth day, primary union being perfect, and on the following day the bowels moved naturally.

The patient has recovered and at the present time, August 10, 1889, writes me that she eats and sleeps well and is in good health, weighing now 115 lbs.

In presenting this contribution to the profession I give no excuse, as the case seems to me, at least, of great importance, first as to the extreme age of the patient, and secondly to the almost fatal shock sustained, which as by a miracle she slowly rallied from and ultimately recovered. Respectfully,

THOS. LEGARÉ, M.D.

Charleston, S. C., August 19, 1889.

The Pekin University and its Medical Department.

To the Editor:—I observe in a recent number of THE JOURNAL a statement that a University under British tuition has been established at Pe-

kin, China, with a medical department in working order.

The Pekin University has been organized in that city for a number of years, under the direction of the Rev. Dr. L. W. Pilcher. The medical department has been in active operation for several years and is doing excellent work. This institution, however, is under American control, and the majority of its faculty are Americans.

JAS. E. PILCHER, Asst Surg. U. S. Army.

Governor's Island, New York City, August 22, 1889.

NECROLOGY.

Death of Dr. Turner.

Dr. J. Edward Turner, the Founder of the New York State Inebriate Asylum, at Binghamton, N. Y., died at his home in Wilton, Conn., on the 24th of July, at the age of 67 years, after a short but painful illness.

Thoroughly impressed with the idea that *inebriety is a disease* needing medical treatment, he gave his life to the work of winning over public opinion, and the coöperation of scientists and the thoughtful philanthropists of his age, to the treatment of the inebriate as a sick man, and not as a criminal.

The Binghamton Asylum was founded as the result of his individual effort, and though for a while diverted to other uses at the time of his death, he was its sole proprietor, and had he lived it would doubtless been the ambition of his life to restore it to its original purpose.

He was in its fullest sense a philanthropist, and only recently is the medical profession ready to accept and utilize many of the tenets which he began to promulgate nearly fifty years ago.

BOOK REVIEWS.

THE DIAGNOSIS AND TREATMENT OF EXTRA-UTERINE PREGNANCY. By JOHN STRAHAN, M.D., M.Ch., M.A.O. (Royal University of Ireland). Jenks' Prize Essay of the College of Physicians of Philadelphia. Philadelphia: P. Blakiston, Son & Co. 1889.

This is a valuable contribution to our knowledge of a very interesting subject, and well merits the prize which has been awarded it. The question of diagnosis before rupture, at the time of rupture, during the first three months, and at or about the viable period are very fully discussed. Considerable space is also devoted to the question of differential diagnosis. Among the concluding remarks on diagnosis the author says, "Those

who diagnose or fancy they diagnose early extra-uterine pregnancies depend on two things, principally, viz., the presence of all the most important signs of ordinary pregnancy and the interruption of menstruation, if only for a period or two, of course with the presence of an extra-uterine tumor. Now the ordinary signs of pregnancy and menstrual suspension may both be absent, in which case they are apt to fail most disgracefully."

The results of rupture are one of two things, either an *intra*- or an *extra*-peritoneal hæmatocele. In the latter case the rupture is so situated that the blood is poured out between the layers of the broad ligament and the effusion is confined in some degree; while in the *intra*- variety the bleeding, which is limited only by the peritoneal cavity, is sure to be fatal, if not immediately, at least after a very short time.

The killing of the fœtus by electrical methods or by injections of drugs, etc., suggests an interesting consideration, and the author observes that, "As in intra-uterine pregnancy the death of the ovum is the great cause of abortion, may not our killing the fœtus bring on efforts at its expulsion, the false abortion which ends in rupture of the tube? In fact, may not the killing of the fœtus promote the very accident we are so anxious to guard against?" Among other considerations which the destruction of the fœtus gives rise to, is, whether or no the placenta continues to grow after the fœtal death. This is a controverted point, though Tait and others do believe in the continued growth of the placenta.

In cases of doubtful diagnosis, the fœtus being dead, a trocar or aspirator may be used to draw off some of the liquor amnii, both to confirm the diagnosis and relieve the pressure within the tumor, though "unless it has been decided to operate immediately for the removal of the fœtus, the use of the trocar is utterly unjustifiable. But very few women have long survived its use."

In the forty-two operations Tait has done for hæmorrhage and abdominal collapse, a name introduced by Barnes to denote that group of symptoms which follow rupture, he has had only two deaths, a mortality of 4.7 per cent.; and it is safe to say that every one of these would have died under any other treatment.

A bibliography of the subject is appended to the volume, making it very convenient for those who wish to study further.

A MANUAL OF INSTRUCTION FOR GIVING SWEDISH MOVEMENT AND MASSAGE TREATMENT. By PROF. HARTVIG NISSEN. Philadelphia and London: F. A. Davis, Publisher. 1889.

A small work of 128 pages, illustrated by 28 woodcuts. According to the author this is probably the only manual on this subject in the English language which gives any information how

to apply the treatment in different diseases. It is the object of the handbook to give directions sufficient to enable the physician, or an operator under his direction, to apply the "movements" in the sick-room without the aid of apparatus.

The value of this mode of treatment should be recognized and neither prejudice nor ignorance should stand in the way of its adoption when it can be beneficial.

THE PHYSICIAN HIMSELF AND THINGS THAT CONCERN HIS REPUTATION AND SUCCESS. By D. W. CATHELL, M.D. Ninth Edition, Revised and Enlarged. Philadelphia and London: F. A. Davis, Publisher. 1889.

If the change from the old-fashioned preceptorship had its immense advantages to medical education they were not, however, wholly unqualified; where much has been gained by the modern system, still something has been lost. What that loss is the present volume indicates better than any brief work can. That peculiar gift of professional tact and talent the author has tried to make conceivable to the reader. It is these qualities, eminently essential to the successful practice of medicine, and usually best acquired by associating with and observing those who possess them, that the preceptor of former times conveyed to the student under him by a power of personality and dignity of bearing which we venture to say few schools are capable of exerting over their students. The success of this work has been such that a ninth edition is before us. The author has in fact made accessible to the young graduate many valuable rules of conduct and words of advice, which as the custom is now-a-days remain untaught, because in the very nature of things we cannot endow a corporate body (a medical faculty) with that personality which will enable it to teach a philosophy of conduct that shall give a distinguishing dignity to all who acquire their knowledge under it.

Such principles the young physician of to-day must acquire for himself, guided by his own natural instinct, observing where he can and reading where he can. An opportunity for such to read with profit is here given.

WOOD'S MEDICAL AND SURGICAL MONOGRAPHS, AUGUST, 1889. William Wood & Co., Publishers.

This number contains monographs upon: "The Treatment of Syphilis at the Present Time," by Dr. Maximilian von Zeissl. "The Treatment of Inebriety in the Higher and Educated Classes," by James Stewart, B.A., and a "Manual of Hypodermic Medication," by Drs. Bourneville and Bricon. The latter is the most extensive work of the kind which we have seen. It contains more than 125 different drugs whose administration

and therapeutics are taken up from the hypodermic standpoint, and arranged alphabetically. For instance, mercurial medication by the hypodermic method receives about 15 pages. The mode of preparing and using the albuminate and peptonate of mercury for injection is fully given. Quinine occupies 11 pages, and the discussion of the other more important drugs is taken up under the heads of Physiological Effects, Local Effects and Therapeutics. There are included many new drugs which are commonly not employed hypodermically, and of which even the therapeutics is not well known, *e. g.*, arbutin, hypnom, kairin, solanim, sparteine, arseniate of strychnine, thallin, urethan, and others. While many unusual drugs, and ones of questionable value, are given a place in this manual, those of well-recognized value receive full and satisfactory treatment.

TRANSACTIONS OF THE AMERICAN ORTHOPEDIC ASSOCIATION. Vol. I. Published by the Association. 1889.

The first volume of this society is a promising one, containing as it does, some twenty-four papers and the discussions which follow each. It will be read with interest by surgeons, and particularly those who devote themselves to this department.

Dr. E. H. Bradford has a valuable communication on the "Treatment of Club-Foot," to which is appended a tabular record of 101 cases, giving results and detailed notes in illustration. A study of these cases is used in the attempt to substantiate the following statements:

1. "That the cases of infantile club-foot can, as a rule, be thoroughly and efficiently treated without tenotomy by mechanical correction, and mechanical retention alone. Tenotomy, however, is an aid even in infantile cases."

2. "That in older cases tenotomy aids the correction, and is not injurious in the permanent result."

3. "That, as a rule, resistant cases of the severest type can be corrected without tarsal osteotomy, by forcible rectification."

4. "That in exceptional cases of resistant club-foot, tarsal osteotomy may be needed for perfect rectification, and is not only justified, but may be indicated in exceptional instances."

Some interesting points were developed in an essay entitled, "An Experimental Study of Fixation and Traction in the Treatment of Hip-Joint Disease, with the Description of a Splint," by Robert W. Lovitt. American orthopedic surgeons generally agree that the best results are to be obtained by the continued use of the long traction splint. While on the other hand, English surgeons do not take the same view, holding that it is impossible to maintain extension with such splints as those described by Davis, Taylor, Sayre and others; also that they

do not furnish adequate fixation of the joint. A series of experiments were undertaken to determine how much fixation is afforded by the ordinary Taylor hip splint using one perineal band, when walking is attempted; and also how much fixation was dependent upon extension. A pencil attached to the apparatus registered mechanically any motion of the joint and a dynamometer measured the number of pounds exerted in extension. The apparatus was first tried in an ankylosed hip, and of course, showed no motion, then upon those who had hip disease, and those who were sound. An amount of motion equal to from 15° to 40° was recorded, and this seemed neither increased nor diminished by altering the extending force. The author does not undervalue extension, but his experiments seem to show that it does not contribute to fixation in any perceptible degree. Former investigations have shown that the articular surfaces are not in the least separated by any ordinary amount of traction, therefore the only explanation of the benefit to be derived from extension rests upon the fact that force thus applied overcomes muscular spasm, and thus diminishes the pressure at the points of contact within the articular capsule. At least the *modus operandi* of this agent is open to further study.

We might cite portions of many other papers which deal minutely and scientifically with their various subjects, but those who are interested can more profitably consult for themselves.

SURGICAL TREATMENT OF DISEASES OF THE BRAIN. By PROFESSOR E. v. BERGMANN. 1889. Published by A. Hirschwald, Berlin. Review in *Berliner Klinische Wochenschrift*, July 8, 1889, by W. Koerte.

The author advises to operate only in cases in which a definite diagnosis can be made. In cases of hernia of the cerebrum he advises tying of the pedicle and removing the tumor. No great harm is noticed from the loss of brain tissue in these cases. There is less danger in the operation for meningocele than in that for hydrocephalus, because in the latter the danger from hydrocephalus continues after the operation. In the occipital region meningoceles are amenable to surgical operation only if they are small or if they are pure meningoceles. Deeply seated abscesses are considered at length. They should be opened and drained whenever positively diagnosed. The diagnosis depends chiefly upon the etiology. The following causes are given: traumatic injury to the hard or soft covering of the brain, or suppurative inflammation of some skull bone, usually the temporal, in connection with otitis media purulenta. Extensive suppuration, notably of the lungs, may be followed by metastatic abscesses of the brain. They may also depend upon tuberculosis. In these two instances

nothing can be hoped from surgical aid. In the other much depends upon an early diagnosis.

The important symptoms are: 1, those caused by the accumulation of pus (temperature, general condition); 2, compression caused by the growth of the abscess; 3, regional affection, this is especially marked if the abscess is near the motor region of the cortex, but the absence of regional affection has no absolute weight if the other symptoms exist. Von Bergmann reports eight cases of successful diagnosis and treatment. All of these cases followed chronic purulent inflammation of the middle ear. He warns very strongly against opening the skull unless a definite diagnosis has been made.

The author is much less hopeful regarding surgical relief for tumors of the brain. The tumor may be diagnosed but it may be difficult to locate it definitely. It is also impossible to determine whether it can be enucleated and, if this is possible, whether or not it will recur. V. Bergmann quotes the very important collection of cases by H. White, which shows that of the 100 cases nine might have been relieved by surgical operations, but of these seven could not have been diagnosed on account of their location.

In cases in which a tumor cannot be located definitely, exploratory trephining is not justifiable. Aside from the possibility of not finding the tumor there are two great dangers, viz.: hæmorrhage and secondary œdema. All of these principles are confirmed by clinical histories of cases observed by himself and others. In seven cases intracranial tumors were diagnosed, located and removed. Three cases died after the operation, one from recurrence after three months, and three cases recovered permanently. Of eighteen cases eight died after the operation, two from recurrence, and eight recovered. In epilepsy operations are allowable only in clearly marked cases of Jacksonian, *i. e.*, epilepsy due to cortical irritation. In these cases v. Bergmann advises excision of the diseased portion by Horsley's method.

In the last chapter puncture and aspiration of the ventricles for relief of intracranial pressure is considered. A patient suffering from long continued headache after a fall was relieved by v. Bergmann by the aspiration of blood from the ventricle. In a case of tubercular meningitis only symptomatic benefit was achieved. The book is complete and a valuable addition to the literature.

MISCELLANY.

EDWARD CHADWICK, a distinguished sanitarian, has said that he could construct a city which would give any desired death-rate from five, or possibly less, to fifty or more in 1,000 inhabitants annually. This has the endorsement of the President of the Health Department of the British Social Science Association, who, at an annual

meeting some years ago, expressed his unqualified belief in the feasibility of Mr. Chadwick's proposition. If this is true, and it comes from very high authority, the responsibility of municipal authorities and boards of health is measured through a wider range than is generally supposed. With a death-rate ranging about twenty-five per 1,000, health officials should multiply their diligence by about five to secure the minimum death-rate.—*The Sanitary News*.

THE faith-cure doctor took the hand of his patient, and looking into his eyes, said: "I can cure you." Patient—"Are you sure?" "Very sure. All you've got to do is to believe. Just believe you're cured. That's all." "All right; I'll try it. Good day." "Hold on a minute, my man. Didn't you forget something?" "What?" "The fee, I charge a dollar a visit." "Oh, yes. Well, believe. All you've got to do is to believe I've paid you and it'll be all right."

LETTERS RECEIVED.

Dr. H. M. McKenzie, Elwood, Ia.; Société Médico-Chirurgicale de Liège, Liège, Belgium; Dr. G. H. Gibson, Dr. J. M. Bessey, Denver, Col.; Dr. Philip C. Knapp, Boston; Dr. L. C. Moore, Muscatine, Ia.; O. H. Burbridge, Chicago; Dr. H. L. Jenks, Hazel Green, Wis.; Dr. Wm. B. Atkinson, Dr. R. J. Dungleon, Philadelphia; I. Haldenstein, New York; Dr. R. W. Ramsay, St. Thomas, Pa.; Dr. N. Senn, Milwaukee, Wis.; Rees Printing Co., Omaha, Neb.; Subscription News Co., Chicago; Dr. L. C. Manchester, Pittsburgh, Pa.; Dr. E. McIlhenny, New Iberia, La.; Dr. Alice T. Hall, Baltimore, Md.; Dr. J. M. Ennert, Atlantic, Ia.; Dr. J. H. Kellogg, Battle Creek, Mich.; J. H. Bates, New York; Scott & Bowne, New York; Dr. Mary F. Lovett, Westminster, Conn.; Dr. J. Priest, Toledo, O.; Dr. W. S. Hall, Cambridge, Mass.; Dr. John S. Sundberg, San Francisco, Cal.; DeWolfe, Fisk & Co., Boston, Mass.; Dr. H. G. Critzman, Welsh Run, Pa.; Munn & Co., New York; Dr. L. O. Bowen, Eastford, Conn.; Peacock Chemical Co., St. Louis, Mo.; Oneita Springs Co., Utica, N. Y.; Dr. Geo. E. Frothingham, Ann Arbor, Mich.; Post Surgeon, Fort Leaveuworth, Kan.; Dr. E. W. Cross, Rochester, Minn.; Dr. J. L. McComas, Oakland, Md.; R. W. Gardner, New York; Dr. Frank S. Billings, Dr. Frank Billings, Chicago; Dr. R. Harvey Reed, Mansfield, O.; Dr. A. M. Owen, Evansville, Ind.; Parke, Davis & Co., Detroit, Mich.; Dr. T. J. Hutton, Chicago; *The Lancet*, London, Eng.; Dr. Alex. Boggs, Paris, France; Dr. John S. Marshall, Green Spring, O.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from August 17, 1889, to August 22, 1889.

Lieut.-Col. Joseph C. Baily, Surgeon U. S. Army, Medical Director, Hdqrs. Dept. of Texas, San Antonio, Tex., August 14, 1889, is granted leave of absence for one month. S. O. 54, Hdqrs. Dept. of Texas.

Commanding officer at Jackson Bks. La., telegraphs the Adjutant General of the Army, that Major Harney E. Brown, Surgeon U. S. Army, died at Jackson Bks. today, at 1:40 o'clock P.M. Jackson Bks., New Orleans, La., August 20, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending August 24, 1889.

Medical Inspector W. K. Scofield and P. A. Surgeon C. T. Hibbett, detached from the "Lancaster."

Medical Inspector C. H. White and P. A. Surgeon F. A. Hesler, ordered to the "Pensacola."

P. A. Surgeon L. W. Curtis, ordered to the "New Hampshire."

Surgeon W. H. Jones, detached from the "Pensacola" and placed on waiting orders.

Asst. Surgeon L. von Wedekind, detached from the "New Hampshire," and ordered to the "Pensacola."

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No. 10.

ADDRESSES.

RECENT ADVANCES IN THE TREAT-
MENT OF DISEASES OF THE
SKIN.

Read in the Section on Dermatology and Syphilography at the Fortieth Annual Meeting of the American Medical Association held at Newport, R. I., June, 1889.

BY L. DUNCAN BULKLEY, M.D.
OF NEW YORK,
CHAIRMAN OF SECTION.

Gentlemen :—In opening the Second Session of the Section of Dermatology and Syphilography of the American Medical Association, I must first express my thanks publicly to the gentlemen who at the last session so kindly called me the second time to preside over your deliberations, an honor which was as unexpected as it was gratifying. I must also congratulate you, and, I believe, the profession at large, upon the interest which the Section has developed, and express the hope that by its means the large and important field of study and practice which is here represented may be simplified, so that diseases of the skin may no longer represent the *terra incognita* which they have sometimes been considered by those inexperienced therein.

As was remarked last year, on opening the session, the Section is organized for work in the line of *practical* dermatology, and as a Section of the American Medical Association it should be attended by members who are not dermatologists, and subjects should be presented which are of general and practical interest and value to the general practitioner if we would seek to give the widest usefulness to our Section.

With this aim in view we have this year, as well as last, prepared a "question box" into which any one may drop a written slip regarding any subject upon which he would like aid or information from those present, or on which may be proposed subjects for future discussion. It is earnestly requested that this method of securing an interchange of ideas be utilized to as great a degree as possible; an hour has been set apart on the second day for answering such questions, and further time can be taken later if necessary; if freely used this plan might be made the means of

developing very interesting practical matter which would not otherwise be reached.

The general topics assigned for discussion at this session, namely, "The Treatment of Tinea Tonsurans," and "The Indications for and Duration of the Treatment of Syphilis," are, it is thought, subjects which are of very considerable practical and general interest. While pathological considerations, and those relating to rare and peculiar diseases of the skin may be of a certain advantage here, and may more or less find a place in this Section, it is hoped that more common matters, which shall be of use in general practice, may in the main be presented, while the more abstruse and difficult subjects shall be left for the consideration of those whose attention is wholly or largely given to this branch, in the American Dermatological Association.

By the rules of the American Medical Association it is the duty of the Chairmen of the various Sections to give an address upon the advances which have been made in the departments of medicine represented by the Sections, and to bring to their attention such matters as may be considered of interest and profit. In accordance with this rule I beg now to direct your attention for a short time to the subject of "Recent Advances in the Treatment of Diseases of the Skin." Inasmuch as this is the first time that this subject has been presented before the Section, we have no date from which we may reckon the *recent* advances in the treatment of diseases of the skin; I have thought it best, therefore, not to confine our considerations to any specified time, but to look over the field a little broadly, and to take account of stock, as it were, endeavoring to discriminate between the good, bad, and indifferent of the more recent so-called "advances" in this department.

It is a constant remark among those acquainted with the subject, that the need is not so much for new remedies, in dermatology, or indeed in any department of medicine, as it is of a better knowledge of the true value and mode of application of those means of combatting disease which we now possess. While the question is repeatedly put to one occupied in any special branch, "What is the newest or best remedy for this or that complaint," he is obliged just as frequently to reply

that there is no one remedy or plan of treatment which is wholly satisfactory in any particular disease, or which will reach every case; and if, perchance, a suggestion is made of any particular drug or method he feels that the chances are very great that there will be some error or some failure to use the remedy correctly, and that the ultimate result is very doubtful. In no department of medicine is this true to a greater extent than in diseases of the skin, and yet nowhere can we see more brilliant results, the accuracy and truthfulness of which cannot be denied, because plainly visible to all, than in the department of dermatology.

The first advance, therefore, to which I would call attention in the treatment of diseases of the skin is the recognition of the fact on the part of those acquainted with the subject that accuracy of diagnosis is essential to success in the treatment of this class of affections, and intelligence in the application of remedies can alone insure results which are not disappointing. I would feel like apologizing for such an apparently self-evident statement, were it not that a considerable experience in consultations with other physicians has made me think that too little care is often spent in studying this class of cases, and in recognizing all the features requiring attention, both as regards the local affection and the constitutional condition of the patient. If the same care and thought were expended upon certain cases of skin disease which are readily given to obstinate or obscure diseases of other organs there would be less difficulty in their management. The time has passed when a patient afflicted with an affection of the skin should at once be given arsenic internally and zinc ointment externally; and then, in the event of probable failure, that he should be given mercury or iodide of potassium, under the suspicion that perhaps there may be some "taint;" and then in the further event of a failure of these plans, that he should be either left to suffer, or be informed that it would be dangerous to cure the skin trouble lest "the disease might strike in." There is much in the practice of dermatology which the general practitioner may readily grasp and use, if only sufficient care and thought be given, and, in my judgment, as remarked before, there is much less need of new remedies than there is of a careful, proper and widespread knowledge of the means already known, and their intelligent use.

The second point to which I would call your attention is, that while accuracy of diagnosis is the first essential to success, it is almost equally important to consider well and appreciate thoroughly the particular condition or stage of the eruption under consideration, and, knowing the action and effect of each remedy to use it accordingly. The same measure advised for a certain disease will act entirely different under different con-

ditions and at various stages of the complaint, so that one constantly sees harm done from harsh remedies when those of a soothing nature were required, and mild measures are often uselessly employed when those of a stimulating character were demanded. As a corollary to this we learn that even the new remedies and methods of treatment advanced will often fail of success unless it is known exactly at what stage or condition they were employed and in what manner they acted.

One more general remark may be added and we will pass to consider some of the more recent advances in dermatology. It is this. Not only do remedies and measures act differently in different persons and under diverse conditions, and in different stages of a disease, but their action may be modified, aided or retarded by a number of influences which are not always thought of, such as diet, hygiene, and the effect of other remedies, internal or external. Therefore, in the use of any newly-recommended measure all other proper adjuvants are to be employed and all antagonistic elements are to be removed; and as a corollary to this we learn that new remedies are not always to be judged negatively by an apparent failure, nor, on the other hand, can we always conclude favorably of the effect of any special agent unless all other elements bearing on the case are also duly considered.

With this much of preface we may consider some of the therapeutical elements which have in recent years been introduced into the practice of dermatology. Time will not permit of a full consideration of all that might be mentioned with advantage, much less of the many which have been brought forward whose claims have not been fully substantiated. Indeed much even that might be of interest and value must be left for my successors in office, who will, no doubt, consider and present the subjects with abler pens than mine.

First, among the advances in dermatology during recent years to be mentioned should be the *mechanical therapy* of diseases of the skin, which, when properly employed, aids very greatly in the management of many conditions which had heretofore proved very rebellious; of this there are several forms. The curette is very serviceable in the treatment of lupus, also in removing small epitheliomata, warts and excrescences, and it may sometimes be used with advantage on chronic patches of eczema, also psoriasis.

The cutaneous punch, as introduced by Keyes¹ is also of value in removing small circular portions of skin, the seat of moles and the like, also powder stains, and likewise in taking sections of diseased tissue for microscopic examination.

The cutaneous lance plays an important part in the treatment of acne, and together with the

¹ Keyes, Jour. Cutaneous and Genito-Urinary Diseases, Vol. v, 1887, p. 98.

comedo extractor, will accomplish more for some cases of this disease than weeks or even months of other treatment can effect without them.

Multiple scarification, performed either with a scalpel or an especial knife made for the purpose, with the cutting surface on the end, or with the many-bladed knife of Squire, serves an excellent purpose in certain cases of lupus, and will also yield good results in some nævi, and in rosacea. The large veins of acne rosacea, especially on the nose, may be removed by slitting them up carefully and burning the track of the vein with a point of nitrate of silver. They may also be successfully obliterated by electrolysis.

Electrolysis now plays a considerable part in dermal therapy, and in some conditions yields brilliant results. Its use, now so common, in destroying superfluous hairs, need but be mentioned, as is well known, it offers about the only method of permanently removing this blemish, which often proves such a serious annoyance or distress to those thus afflicted. The only other method known to me is one which I devised and presented some years ago, namely, that of boring out each hair follicle with a three-cornered needle, dipped in carbolic acid; when well performed this is fully as successful as electrolysis, and is preferred by some patients who have had both methods used on them.

Electrolysis is likewise of value in destroying pigmentary and hairy moles, and nævi of various sizes, as also in producing the absorption of tumors. The galvanic cautery also plays an important part in the treatment of some affections, the end, however, being the same as that obtained by the actual cautery and by Pacquelin; but with the galvanic cautery more delicate work can be done, and Besnier has devised a considerable variety of shapes for the knives, some of them having a number of fine points, heated by electricity, for the treatment of nævus and other conditions. The value of the galvanic current, variously applied, must also be reckoned among the advances of recent years. It is most valuable in checking the pain accompanying and following herpes zoster, and there is some evidence that it tends to arrest the progress of the disease; it is valuable in relieving the pain in dermatolgia, and to a certain extent will control pruritis. Galvanization has also been reported on favorably in connection with other diseases of the skin, notably eczema, it being used in the form of general or central galvanization. Faradization has also been recommended in acne rosacea, but is of doubtful value.

Perhaps there are no remedies to which more attention has been called of late than ichthyol and resorcin, largely through the instrumentality of Dr. Unna, of Hamburg, and time sufficient has now elapsed since their first introduction to allow of judgment regarding their true merits, for quite contradictory reports have appeared con-

cerning them. They are placed by Unna as reducing agents, drawing oxygen from the tissues, and altering the corneous layer of the skin. They are by no means indifferent substances, but while capable of doing more or less good when properly used, they are irritating in many conditions, and in my experience, as also that of some others, they have not fulfilled the expectations excited by Unna's original contributions to the subject.

Ichthyol should always be used weak at first, the strength being increased according to the effect produced; 2 per cent., either in water or ointment, is strong enough to begin with, and rarely will more than 5 per cent. be well borne, at any rate on American skins. As a lotion, 2 to 3 per cent. in water, it certainly often exercises a remarkable effect on ulcers of the leg, they being kept wet with it all the time, the dressing being covered with a thickness of woolen blanket (but not rubber or oil-silk), to prevent too rapid evaporation. It is sometimes well at night to substitute an ointment, with 2 or 3 per cent of ichthyol and a little zinc oxide. In certain moist eczemas about the folds of the body, a light bathing with a weak, 2 per cent. ichthyol lotion, followed by a calamine and zinc lotion, will give much better results than the latter alone. In certain cases in eczema in infants the effect produced by a thorough and continuous use of a zinc ointment containing 20 grains of ichthyol and 15 or 20 of salicylic acid, is certainly remarkable, and undoubtedly much greater than from either the zinc ointment alone, or when combined only with the salicylic acid.

Time does not permit of a fuller consideration of ichthyol in this place, but enough has been said to show that it is an agent of some importance, capable of doing harm when used too strong, and of moderate value in allaying acute erythematous conditions of the skin.

Resorcin, which has been spoken of much in connection with ichthyol, is said to have much the same effect, but its action is more uncertain, and its use more restricted. It is undoubtedly a parasiticide, and forms a very cleanly and pleasant application in tinea vesicular, used in solution from 3 to 5, or even 10 per cent. in water with a little alcohol and glycerine. It is also of value in tinea circinata and maginatum, and it is claimed that a strong ointment, from 3 to 10 per cent., will act most favorably in tinea sycosis. Resorcin is also serviceable in pityriasis capitis, used in a 3 to 5 per cent. solution with alcohol and castor oil. In seborrhœic eczema it also acts very well in a strength of 3 per cent., with zinc ointment. In psoriasis it may be used considerably stronger, even up to 10 to 20 per cent. in ointments.

Resorcin certainly seems to have considerable effect upon the sebaceous glands, and is useful in

many of the forms of acne. Used in an alcoholic and watery solution, of from 2 to 5 per cent., it checks the oily secretion so common on portions of the face, and as an addition to lotions containing sulphur it often aids greatly in the treatment of acne. It must not be forgotten, however, that resorcin may prove very irritating if used in too strong a proportion—3 to 10 per cent. is quite sufficient—and also that it often produces a discoloration of the epidermis, which may take some little time to wear off.

Unna has also, during the few past years, written much concerning the uses of various ointments made into the form of plasters, by making them thicker and more sticky, and then pressing them upon and into the meshes of muslin; these so-called "pflaster-mulle" have been imported from Germany but little, and are difficult to obtain. They are made to contain zinc, tar, naphthol, chrysarobin, ichthyol, salicylic acid, and other ingredients. These plasters serve a certain valuable purpose in keeping a fixed dressing in localities where it would otherwise be difficult to retain an application, and also by the maceration afforded aid in removing disease; on the other hand, they often prove too drawing, and unless the medicament is very bland, much inflammation may thereby be set up.

In the same line of therapy may be mentioned the "dermatological plasters," now prepared and offered by several firms in this country, which at times serve an excellent purpose; they are mostly made up with rubber plaster, and often prove too heating and drawing, and can hardly be considered the equivalent either of the "pflaster-mulle" or of proper ointments well spread on lint and kept in place by suitable dressings. Among these new plasters may be found those containing very many of the more common and newer drugs used in dermatology. I cannot speak personally regarding very many of these, but some of them prove at times of very great service. Thus, in thickened patches of eczema, about the hands and feet especially, the salicylic acid plaster, 10 or 20 per cent., will promote absorption and greatly reduce the thickening; those with zinc and tar, each 10 per cent., are also valuable in eczema, and those with 10 per cent. of chrysarobin act well in psoriasis; all are familiar with the value of plasters containing mercury in reducing the late lesions of syphilis.

Attempts have been made in other directions as to the means of securing fixed dressings on the skin, and various preparations have been brought forward to hold the medicament in solution or suspension, while it is painted over the affected surface. The use of collodion, made flexible with castor oil, has long been known, and this often serves a most excellent purpose when containing from 3 to 5 per cent. of chrysarobin; or pyrogallic acid, and as much salicylic acid; io-

dine may also be successfully applied in this manner. Gutta-percha dissolved in chloroform, the liquor gutta-perchæ of the Pharmacopœia, or tranmaticine, as it has been called by the trade, affords another admirable method of affixing medicaments to the skin; any desired substance, oxide of zinc, bismuth, tannin, chrysarobin, or preparations of mercury may be suspended in it, and made to adhere to the skin thereby.

Another mode of making fixed dressings is that known as glycerine jelly, made by boiling one part of gelatin with three or four of glycerine, and a little water if necessary to make a gelatinous mass. The various ingredients desired are incorporated with this while hot, by stirring, generally from 5 to 10 per cent. being added, together with a little carmine to give a flesh tint if it is to be used on exposed surfaces. This forms a bland dressing, and with zinc or bismuth serves well to protect large surfaces; it will not adhere when there is moisture exuding, but on dry, scaly eczema, in some cases of lichen planus, and pityriasis rosea, it forms a serviceable dressing. Carbolic acid, camphor, or cocaine may be added to relieve itching. It is applied by placing the jar containing the jelly in hot water, when the liquefied substance can be freely painted over the affected surface, forming a smooth protecting coat as it cools.

Considerable attention has been called to lanolin during the past few years, largely, it is feared, on account of the vigor with which it has been pushed in a mercantile way. Its merits have been pretty well tested, and it may be stated that it has not fulfilled the high expectations which have been raised concerning it; it has its value and its applications, but they are limited, and it will undoubtedly take its proper place among the remedies which are of value in the treatment of diseases of the skin. It does not answer alone as a basis for ointments, but when combined with other fatty ingredients, in about 25 per cent., it often aids in keeping the skin soft and pliable, when without it the oily matter would disappear and leave the surface harsh. It has been advocated largely on account of its supposed power of inducing absorption of the medicament which it contained; if this power existed in this substance alone, it would not recommend it for universal use, for in much of dermal therapeutics the object is not to secure absorption of remedies, but to act on the outer surface. It would surprise many to see how very little it is used by those engaged in the practice of dermatology.

Another addition to the class of fatty bases for ointments which has been brought forward of late years, is found in the various preparations made from petroleum, notably, vaseline, cosmoline, and albolene. All are familiar with the wide range of applicability of these substances, and the service which they have rendered is un-

questionably very great, and they could be illy spared from the Pharmacopœia. But it is proper here to raise a word of caution against their too common use as a basis for ointments, it being even proposed, I am informed, to make it the official basis of ointments in the coming revision of the Pharmacopœia. The New York Dermatological Society has already taken strong action in opposition to this suggestion, and every one who has carefully tested the subject will readily see that it is far inferior to other substances for this purpose, certainly in the large proportion of instances. When it is desired to lubricate the surface, as in pityriasis, rubra and many dry and scaly conditions of the skin, nothing better can be desired; and as an excipient, to convey carbolic acid, or other anti-pruritic remedies, to the skin, it answers perfectly. But when it is desired to form a protective covering, which shall hold a medicament in contact with the skin for some time, vaseline and cosmoline are found far too soft, and even albolene does not seem to afford the "body" desired for an effective ointment, such, for instance, as is found in good diachylon ointment made after Hebra's formula.

Here I must speak again for the ointment which I have often mentioned as preferable, in my experience, to all others, and which I invariably use in compounding prescriptions, namely: the unguentum aquæ rosæ of the pharmacopœia. This is composed of almond oil, spermaceti and white wax, with considerable water, and is far more grateful to the skin than lard, and of a consistency which combines best with very many substances. Brief mention may be made of some single substances which have come into pretty general use in dermal therapeutics.

Salicylic acid has been mentioned incidentally several times. It is a valuable addition to our armamentarium, but requires some care in its use. It has a drying effect on the skin, and the addition of 2 or 3 per cent. of it to various ointments will often increase their effect greatly, though sometimes it proves irritating. Combined with hair tonics, in a strength of from 3 to 5 per cent., it acts excellently in cases where there is an oily seborrhœa; dissolved in alcohol and water, 10 to 20 per cent. solution, it is an efficient parasiticide, and incorporated with oxide of zinc, a drachm each to an ounce of powdered starch, it is very efficient in checking excessive perspiration, in the axilla and elsewhere.

Chrysophanic acid, or chrysarobin, as it is now called, is well known to the profession from the remarkable power which it has in dispelling the lesions of psoriasis. When it is desired to remove the eruption quickly, regardless of all else, no agent will accomplish this as quickly as this drug, properly used, but, on the other hand, the disadvantages attending its use in the way of staining the skin and clothing, together with the intense

inflammation which it occasionally sets up, has greatly restricted its use, in private practice at least; personally I use it but little, and then mainly in the form of paint, with collodion or gutta-percha, as before alluded to.

Pyrogallic acid has to a certain extent taken the place of the chrysarobin, but it is less efficacious in psoriasis. Its effect in epithelioma, however, is often quite remarkable, and the powdered acid sprinkled freely on a small epithelioma will often quite alter the diseased action, and ensure healing.

Anthrarobin has also been brought forward as a substitute for chrysarobin, and appears to have a marked effect upon psoriasis. Used in a 10 per cent. ointment it removes the eruption almost as quickly as chrysarobin,² and without producing inflammation, or staining as much as the latter. Alkali baths increase its action.

Naphthol has attained considerable reputation from its pronounced value in the treatment of scabies, a 10 per cent. ointment sufficing to remove the disease with little trouble. It is also serviceable in psoriasis, in 15 per cent. ointment, and in seborrhœa and in some other affections.³

Two or three antipruritic remedies may be mentioned before bringing this hasty sketch to a close. Menthol in from 5 to 15 per cent. solution, with a little alcohol and glycerine and water, often proves a most serviceable means of allaying itching. Cocaine, from 5 to 10 per cent. in ointment or solution, is also a remedy of value in certain cases. It is also valuable in connection with epilation for parasitic diseases of hairy parts, used either in solution, or in connection with the ointment applied it will very greatly diminish or entirely obviate the pain attending this operation. Campho-phenique, a newly presented remedy, composed of camphor and carbolic acid, often proves efficient in pruritus; a drachm to the ounce of vaseline, or perhaps a little stronger, will often give complete rest to an intolerable itching.

In this attempt to direct attention to some of the more recent additions of value to our dermal therapeutics, I have confined my attention entirely to local treatment, for here it is that the greatest advances have been made, or rather those which are most clearly demonstrable. But I cannot close without again throwing out the suggestion that this is by no means all of dermatology, and he will succeed but poorly who relies alone or mainly on local measures. While it is of the highest importance that these be proper and suitable, it is none the less essential, to real and permanent success, that all elements which contribute to the end, as diet, hygiene, and internal medication, should be used intelligently and persistently.

Again I feel like apologizing for the plainness

² Bronson. *Journal of Cutan. and Genito-Urin. Diseases*, November, 1888, p. 409.

³ Van Harlingen. *Amer. Jour. Med. Sci.*, October, 1883, p. 479.

of my speech, and the urgency with which I press this matter; but my apology is only that experience has so often shown me that failure more commonly comes from not perfectly grasping and considering all the elements bearing upon skin cases, than from the lack of proper remedies to meet diseased conditions, that I cannot refrain. The number of new remedies and measures which have been proposed and advocated since I first took up this branch of medicine, twenty years ago, is far greater than could be imagined by one who had not specially watched the subject, and even a brief recital of them might occupy most of the time of our Section, and yet very few of them have stood the test of time and experience, and still fewer of them have obtained a wide and practical recognition, and are now employed.

I would not, of course, discourage attempts to make therapeutic advances in dermatology, but I would only throw out the suggestion of Holy Writ, both to those proposing and those accepting novelties in this department of medicine, "Prove all things, hold fast that which is good."

ORIGINAL ARTICLES.

THE MEDALS OF BENJAMIN RUSH, OBSTETRICIAN.

Read at the Fortieth Annual Meeting of the American Medical Association, held at Newport, R. I., June, 1889.

BY HORATIO R. STORER, M.D.,
OF NEWPORT, R. I.

Recently, during researches relative to a paper upon the medals, jetons and tokens illustrative of the science of medicine, at present appearing in the *American Journal of Numismatics*, I learned of a gold medal conferred by the Society of Medicine of Caen, France, upon the late Dr. Jean Charles Faget, of New Orleans, a graduate of the University of Paris, Chevalier of the Legion of Honor, and distinguished as an author in various departments of medicine.¹ With the impressions of this medal that have been kindly sent me by Dr. Faget's family, I have received copies of a portion of his works. Among them is an interesting brochure, published at Paris by the Baillières, entitled, "L'Art d'apaiser les Douleurs de L'Enfantement" (The Means of Assuaging the Agony of Parturition).

THE CLAIM OF RUSH TO THE TITLE OF OBSTETRICIAN.

In this memoir, Dr. Faget quotes a striking statement by the most eminent, perhaps, of American physicians, Dr. Benjamin Rush, of Philadelphia, for many years professor of the institutes

and practice of medicine and of clinical practice in the University of Pennsylvania. In discussing the symptoms of labor, and as if directly anticipating and answering in advance the objections that were to be urged half a century later in his own city, by the celebrated Dr. Charles D. Meigs, Dr. Rush had said: "By some divines these symptoms, and particularly pain, have been considered as a standing and unchangeable punishment of the original disobedience of woman, and, by some physicians, as indispensably necessary to enable the uterus to relieve itself of its burden. By contemplating the numerous instances in which it has pleased God to bless the labors and ingenuity of man, in lessening or destroying the effects of the curse inflicted upon the earth, and by attending to the histories of the total exemption from pain in child-bearing that are recorded of the women in the Brazils, Calabria, and some parts of Africa, and of the small degrees of it which are felt by the Turkish women, who reduce their systems by frequent purges of sweet oil during pregnancy, I was induced to believe pain does not accompany child-bearing by an immutable decree of Heaven." And again: "I was encouraged (in this) by having known delivery to take place, in one instance, during a paroxysm of epilepsy, and in another during a fit of drunkenness; in both of which there was neither consciousness nor recollection of pain."²

The notable passage referred to above as reproduced by Dr. Faget, in his French monograph, is the following: "I have expressed a hope in another place that a medicine would be discovered that should suspend sensibility altogether, and leave irritability, or the power of motion, unimpaired, and thereby destroy labour pains altogether."³

The "another place" to which Rush here makes allusion is a letter dated May 12, 1802, to Dr. Edward Miller, entitled "On the means of lessening the pains and dangers of child-bearing, and of preventing its consequent diseases." In this, when speaking of cases "where the absence of throes and the slow progress of delivery indicate a deficiency of muscular irritability in the fibres of the uterus," Dr. Rush shows the advantage of opium, and goes on to say, "I think I have seen the happiest effects from that excellent medicine in such cases, in destroying useless pains and shortening the progress of the labor. How far a medicine (if such can be found) so powerful as wholly to suspend the sensibilities of the nerves, without impairing their irritability, might succeed in destroying pain altogether, I know not."⁴

In this letter, aside from the special point that I make in the present paper, Dr. Rush demonstrates, throughout, that he was a skilful obstet-

¹ The biography of this gentleman will be found in our Permanent Secretary, William B. Atkinson's work, "The Physicians and Surgeons of the United States," Philadelphia, 1878, p. 44.

² "Medical Inquiries and Observations," Third Edition, 1789-1811, iv, pp. 373, 374, 376.

³ *Ibid.*, p. 376.

⁴ *Medical Repository*, vi, 1803, p. 24.

rician. In its very title, he closely associates the pains of labor with its dangers, he announces that they can both be lessened, he recognizes that they are the potent cause of subsequent disease, and he teaches its prevention. Here, as in the passage quoted by Dr. Faget, Dr. Rush foreshadows the great discovery which has taken from parturition its anguish, without interfering with its progressive natural action, and has greatly lessened its perils to mother and child.

Upon referring to the work of Walter Channing, of Boston—a native, by the way, of Newport, and upon this occasion to be spoken of with especial honor—to whom, as also to Sir James Y. Simpson, as the first physician to induce artificial anæsthesia in childbirth, Dr. Faget gives due credit, I find this comment: "It is grateful to recur to the opinions of our distinguished countryman (Dr. Rush) on a point which he approached with sentiments of the profoundest reverence, on account of the authority on which it is supposed to rest, whilst he successfully controverted the popular inference, namely: the penal character, involving a physical necessity of pain in labor." He had conceived "a hope. Was it not prophecy? Had it not so much of truth as a basis, that the great discovery of our own day seems to be the revelation of that truth? His doctrines were rather inductions, or the generalizations of facts, than theories." He "expresses 'a hope' of the discovery of a remedy of (obstetric) pain," but he also states "the reasonableness, the moral evidence, of that hope, so that it becomes faith."⁵

It will be noticed that Rush distinctly contemplated the removal of sensibility alone, and the retention of uterine activity. His views therefore were precisely those of the best authorities of the present day, regarding the conduct of natural labor. He was in general sympathy with Sydenham, whose works he edited, and for whom he even named his country seat, and it is not unlikely that through studying upon this account the more closely the effects in labor of opium, his opinion of which I have already quoted—and that preparation of it which is known as Sydenham's to the present day—he came to perceive the end that was to be searched for in childbirth beyond merely soothing its pain, namely: the preservation unimpaired of uterine contractility and expulsive power. Dr. Rush, besides, was far in advance of his time in recognizing the evil effects of alcohol upon the human system, both in health and disease. One of the cases which he reports was of painless labor "during a fit of drunkenness." This would have added to his desire to produce the effect, temporary anodynia, while avoiding its disreputable and injurious cause.⁶

That Rush had anticipated by nearly fifty years

the magnificent idea which was to result in freeing woman from the burden of incalculable suffering that had been borne by her through the ages, seems to have been recognized by no one besides Channing, save Faget and one single other.

In 1876 Dr. Gaillard Thomas both noticed and quoted Rush's aspiration, yet he seems to have mentioned it as but an incident in the course of his generous tribute to Simpson, the more striking from appearing in the very same book wherein was made the direct implication, of course an accidental one, that the anæsthetic property of chloroform was an English and not a Scotch discovery.⁷ Dr. Thomas, in speaking of the introduction of anæsthesia into the lying-in chamber as an era in the history of obstetrics, thus declares: "It is somewhat singular that after the discovery of anæsthesia in this country, after the prediction, long before its discovery, by one of America's greatest physicians, that 'a medicine would be discovered that should suspend sensibility altogether, and leave irritability, or the power of motion, unimpaired, and thereby destroy labor pains altogether'; after it had been employed here in hundreds of cases for surgical operations, this link of the chain should have been forged by a European. Yet such was the case, and far be it from any American to begrudge him one atom of the glory which he deserves, or to endeavor to dim its lustre by 'faint praise.'"⁸

We do not find Rush's prophecy, where of all places it would have most naturally been looked for, in the bitter letters of the elder Bigelow, of Boston, in 1869 and 1870, to Sir James Simpson, nor in the minute statement, six years later, by his son,⁹ although both of these gentlemen were colleagues of Channing in the Medical School of Harvard University.

Channing seems to have been the first to discover the great suggestion made by Rush. His reference to it in 1848 was apparently perceived by none till Thomas in 1876—thence by none till Faget in 1880, who again was unaware of the allusion to it that Thomas had made. From 1880 till now there exists the same utter silence as before.

I make this statement with hesitation, for the fact seems almost incredible. Several friends, however, have assisted me during the present investigation. From the Treasurer of the Rush Monument Association, and ex-President of our own, Dr. J. M. Toner, the person of all now living probably most familiar with the life of this signer of the Declaration of Independence, I have received for examination many biographies of Rush,¹⁰ from his own very extensive collection of

⁷ "A Century of American Medicine, 1776-1876," Phila., 1876, p. 80.

⁸ *Ibid.*, p. 262.

⁹ H. J. Bigelow. "A History of the Discovery of Modern Anæsthesia." "A Century of American Medicine," Philadelphia, 1876, pp. 73-112.

¹⁰ T. Sanderson's "Biography of the Signers of the Declaration

⁵ "A Treatise on Etherization in Childbirth." Boston, 1848, p. 150.

⁶ "An Inquiry into the Effects of Ardent Spirits upon the Human Body and Mind," 1785.

medical works now in the Congressional Library, and he has besides aided me in the search itself. Dr. Toner writes me as follows: "I have nowhere found allusion to the wonderful hope expressed by Dr. Rush." Dr. Paul F. Mundé, of New York, who as editor for so many years of the *American Journal of Obstetrics*, aside from his own special researches in this direction, has had reason to keep informed of all that has been published upon midwifery, reports a similar result. "I do not recollect," he says, "ever seeing the name of Dr. Rush in this connection. Certainly, he had a remarkable gift of prophecy!" Dr. James R. Chadwick, of Boston, the founder of the great medical library at Boston and a most faithful observer of all that occurs in obstetrics, writes me to the same effect. "The prophecy of Dr. Rush was new to me. I have not seen it alluded to by any writer. It is of very great interest." And Dr. Gaillard Thomas, whom alone besides Channing and Faget I had found alluding to Rush in this connection, informs me that he recollects no one who has appreciated Rush's prophecy save Channing.

You and I would, I think, have felt aggrieved had it been intimated that we were unfamiliar with the works of Rush and of Channing, and the chapter by Thomas, but for myself I am willing to acknowledge that having eyes I saw not, neither did I understand. With all my interest in the general subject, the full significance of Rush's true position toward this question, has not struck me until now." A student at Harvard University during the first use of sulphuric ether at the Massachusetts General Hospital, and though still an undergraduate a witness of many of the earlier operations during which ether was there employed—a friend of Dr. Charles T. Jackson, whose gold medal from the Swedish Government commemorates that, however he would have neglected of himself to communicate the discovery to the world, the idea of employing sulphuric ether

as an anæsthetic was due to him—a pupil of Channing, and of Simpson, whose great Montyon gold medal from the Institute of France was given not merely for his other transcendent merits, but because by annulling the pains of childbirth, he thereby removed the primal curse, and lessened in almost equal degree both infantile and foetal mortality, and by employing chloroform as the agent, was better able than with ether to momentarily suspend sensibility, in Rush's language, without impairing uterine irritability—and having myself twenty-six years ago, in 1863, contributed by an essay upon the subject¹² that Thomas in the "Century of American Medicine," already referred to, was kind enough to call "of considerable value,"¹³ to the work these preëminent philanthropists had commenced in reference to the general employment, even in natural labor, of artificially induced anæsthesia, I have yet failed, till the present moment, to properly recognize Rush in one of the most beneficent of the many labors in which he was engaged. His work as a sanitarian had been duly appreciated.¹⁴ He had published papers upon diet,¹⁵ climate,¹⁶ military hygiene,¹⁷ leprosy,¹⁸ hydrophobia,¹⁹ and yellow fever,²⁰ and for his great services during the epidemic of the latter in 1793, he had received unusual honors; among them, gold medals from the King of Prussia in 1805 and the Queen of Etruria in 1807, and a diamond ring from the Czar of Russia in 1811. The chief point upon which, I predict, his lasting fame will rest was, however, wholly unappreciated during his life, and now, seventy-five years after his decease, it seems to have escaped the notice of all his biographers and to have been but three times alluded to by writers upon midwifery.

Very interesting, moreover, appears the fact, to which Dr. Faget has also drawn attention, that Dr. Rush studied at the University of Edinburgh,

of Independence—Rush." Philadelphia, 1823, Vol. iv, pp. 249-288.

2. "Report of the Committee on the Erection of a Monument to Dr. Benjamin Rush." JOURNAL OF THE AMER. MED. ASSOCIATION, 1885.

3. Dr. Thomas D. Mitchell. "The Character of Rush." Introductory Lecture at Philadelphia College of Medicine, 1848.

4. Dr. David Hosack. "An Introductory Discourse, etc., and a Tribute to the Memory of the late Dr. Benjamin Rush." New York, 1813.

5. Dr. Lettson. "Recollections of Dr. Rush." London, 1815.

6. C. "A Tribute to the Memory of Dr. Rush." The Port Folio (Phila.), October, 1813.

7. Dr. David Ramsay. "An Eulogium upon Benjamin Rush, M.D." Phila., 1813.

8. "Benjamin Rush, M.D." National Portrait Gallery of Distinguished Americans, Vol. iii, Phila., 1836, pp. 52-61.

9. "Sketch of the Life and Character of the late Benjamin Rush, M.D., L.L.D." Am. Med. and Phil. Register (New York), July, 1813, pp. 1-16.

10. "Elegiac Poem, on the Death of Dr. Benjamin Rush." Phila., 1813.

11. Dr. G. K. Johnson. "Memoir of Dr. Benjamin Rush." 1877.

Among other memoirs of Rush, besides the usual Cyclopaedic ones that I have consulted, have been that contained in Thacher's Am. Med. Biography (Boston, 1828), and the admirable "Benjamin Rush and American Psychiatry," by Dr. C. K. Mills, of Philadelphia (Medico-Legal Journal, December, 1886).

¹² I had not recognized Rush's place, or Faget's either, among obstetricians, when I prepared my paper upon the medals, jetons and tokens illustrative of obstetrics and gynecology (New England Medical Monthly, November and December, 1886).

¹³ "The Employment of Anæsthetics in Obstetric Medicine and Surgery." (Read before the Massachusetts Medical Society, June, 1863.) Boston Med. and Surg. Journal, October, 1863, p. 249; and republished under the title "Eutokia; A Word to Physicians and to Women upon the Employment of Anæsthetics in childbirth." Boston, 1863, 8vo. See also, "On Chloroform Inhalation during Labor; A Reply to Dr. Robert Johns, of Dublin." Boston Med. and Surg. Journal, August, 1863; and "The Practically Absolute Safety of Profoundly Induced Anæsthesia in Childbirth, as compared with its Employment for General Surgery." Edinburgh Medical Journal, February, 1877.

¹⁴ Loc. cit., p. 268.

¹⁵ "The Medals, Jetons and Tokens illustrative of Sanitation" The Sanitarian, April, 1888, p. 349, etc.

¹⁶ "An Inquiry into the Effects of Ardent Spirits," etc., already quoted; "Observations upon the Habitual Use of Tobacco upon Health, Morals and Property."

¹⁷ Dr. Rush edited Cleghorn on the "Diseases of Minorena," in 1809; and shortly after, in 1810, Hillary upon the "Air and Diseases" of the same island.

¹⁸ Dr. Rush edited Pringle on "Diseases of the Army," in 1810. He had held, under appointment from the Continental Congress, the high office of Surgeon and Physician-General of the Hospitals in the Middle Department of the Army.

¹⁹ "Observations, intended to favor a supposition that the Black Color of the Negro is derived from Leprosy." Trans. Am. Phil. Society, iv, 1792.

²⁰ "Remarks upon the Hydrophobia." Am. Med. and Phil. Register, N. S., July, 1813, p. 16.

²¹ "Facts, intended to prove the Yellow Fever not to be Contagious," 1803; "An Account of the Bilious Yellow Fever as it appeared in Philadelphia in 1793, 1794, and each successive year till 1805."

and had access to that wealth of mediæval medical literature in its library in which Simpson so revelled, and whence he was accustomed during his researches into obstetric medicine, surgery and sanitation, to adduce so many wholly forgotten precedents. As a student myself of that ancient school, I can appreciate the influences that formed Rush's character, as observer, medical philosopher and practitioner. Born near Philadelphia in 1745, Dr. Rush took his degree at Edinburgh after two years of study there in 1763, and he proved Scotch in his subsequent methods of thought and of action, till his death in 1813.

Channing again was a pupil of Rush, to whom it was always his delight to affectionately refer. He graduated as a physician at the University of Pennsylvania in 1809. Through Rush's influence it was, undoubtedly, that he in turn resorted to the University of Edinburgh, and there drank from the fountain that had inspired his preceptor. It was not till 1812 that he received his medical degree at Harvard. He retained through his life his affection for the Scotch capital. His relations with Simpson were intimate, and it was his delight that while Simpson was the originator of actually induced anæsthesia in midwifery, he himself was the first American to urge its general use for this end. So far as the realization and final employment of obstetrical anæsthesia are concerned, Edinburgh, through Channing its American, as well as Simpson its direct representative, well earned its palm. It is strange that the first conception of the idea should also have been by a foster child of Edinburgh, Dr. Rush. Again, Drs. Channing and Charles T. Jackson were friends and close neighbors. They had long before occupied the relations of teacher and pupil. They lived upon the same street, their houses being but a few feet apart. They were upon confidential terms of acquaintance, with similar tastes for abstruse research in very unusual directions. The only wonder now is that the one, knowing the need of suffering woman which Rush at the very commencement of his medical studies had taught him, for an artificial solace at the time of her greatest physical trouble, and the other, having discovered and bearing for so long in his mind the anæsthetic qualities of the agent which gave the first step towards the solution of the problem—that these men should not have come more closely together, and the obstetric world's great secret been earlier made known. Jackson was an accomplished chemist, and searcher for recondite applications of his science to art, and Channing a most remarkable medical antiquarian. With Channing as his coadjutor, Jackson would not probably have been so grasping for riches and for fame as he proved when associated with Morton, though this may have been but the premonition of the mental malady which, as in the sad case of his competitor,

Horace Wells, occasioned his death—while poor Morton, jealous and all tenacious to the last, died, though more suddenly than Jackson, just as consequentially. The fearful quarrel, that involved in its scandal wellnigh the whole profession of the time, and indeed almost the good name of science itself, would perhaps thus have been avoided, and the birth of the divine idea might not have been, as it was, attended by the sundering of intimate personal ties, by deep distress and by wailing, the echoes of which have as yet scarcely ceased.

There is a strong parallel that may be drawn between the posthumous estimates of the two illustrious physicians of whom I have chiefly spoken in the present communication. It was at the close of the meeting of the American Medical Association at Washington, in May, 1870, that the news was received of Simpson's death, telegraphed by his son to your present reader within a very few moments after the event had occurred, and there are undoubtedly those now here who recollect with what regret the announcement was received by the Association, and the solemnity of the memorial meeting which was held immediately afterwards by its delegates and the medical residents of Washington. Whatever the previous feeling of individual members of the profession, in favor of ether or of chloroform as an anæsthetic, or regarding the respective claims of Boston and Edinburgh, which had improperly been made to seem antagonistic, all cavil was silenced at the touch of death. It has been so also with Dr. Rush. The rivalries of his time, which were intense, are forgotten. His own city, to which in his lifetime he was no prophet, points to him with pride. The great professional centres of our continent vie with each other in recognizing him as the most fitting representative of early American medicine, and the chief ornament of the far reaching University whose distinguished provost is one of the orators at the present meeting of the Association. Seventy-six years have now passed since the death of Rush. It is but of late, as our lamented ex-President Gross said of our equally great McDowell, that "the chaplet that should have been worn on his brow has been placed by a grateful profession upon his tomb."²¹ To add a fresh leaf thereto is not my privilege merely, but a filial duty. It is seldom that a man can trace back for a hundred years the influences that have shaped his own life and the little work he may have attempted to accomplish for medicine. Rush was at Edinburgh in 1768. It was entirely through his advice that thither went his pupil Channing. It was by Channing's influence that it became my own Mecca in 1854. Sincerely grateful, therefore, I am to Rush, and delighted to aid towards the high esteem in which he will henceforth be held by our obstetrical brotherhood. Should the question ever arise, from the sequences

²¹ "A Century," etc., p. 127.

that I have endeavored to trace, whether Simpson, like Channing, had appreciated Rush's prophecy, I am sure from what I know of his character, that such could not have been the case. He ever freely gave of his knowledge to the world, concealing nothing, and he was particularly generous in his treatment of Americans, whether living or dead. Even after Channing had quoted Rush, the full meaning of the American prophecy seems to have escaped Simpson, as it has us all, else he would have been sure to have used it, sharply, when replying to the senior Bigelow, equally unaware of its existence. The latter of Simpson's answers to the Boston sage was written, it will be remembered, from his deathbed. It was his farewell to the profession, of obstetrics and at large—happy, he said, "if it tend to fix my name and memory in their love and esteem."²² At such a solemn hour, had he clearly understood what we now know of Rush, his would have been the hand, promptest of all, to give justice where it was due.

Just as John Bell, of Edinburgh, in 1794 urged the performance of ovariotomy, and in 1809 it was successfully accomplished by his pupil, Ephraim McDowell, of Kentucky, so in 1802 or thereabouts Dr. Rush, a graduate of Edinburgh, foresaw the possibility and need of obstetrical anodynia, and in 1847 his dream, by all forgotten, became reality at the hands of the Edinburgh professor, Dr. Simpson.

Dr. J. R. Chadwick has asked me if Rush could have been familiar with Joseph Priestley's laboratory experiments with nitrous oxide. I have no doubt that such was the case, aside from the fact that after 1794 Priestley was a neighbor of his in Pennsylvania, and most probably also a personal friend. (It is another curious coincidence that a near relative of the philosopher, Dr. William O. Priestly, of London, should have been one of Simpson's best loved and subsequently most distinguished pupils.) It is moreover possible that Rush had noticed what Davy had just then suggested, in 1800, regarding the use of nitrous oxide as a purely *surgical* anæsthetic. However this may be, the fact remains that Rush had advanced far beyond the point assumed by Davy. What he desired and foretold was not the destruction of sensibility alone, but the retention with this, in full activity, of a certain usually dormant, but in obstetrics all-important, system of nerves. Davy made no reference to allaying the pains of childbirth. His whole thought was of *surgical* anodynia, the mere quieting of general sensibility. He evidently never dreamed of obstetrical anodynia, where nervous irritability and uterine contractility must be retained unimpaired. And so with Boston. To Boston, indisputably, belongs the honor of having first demonstrated the general practicability and safety of induced surgical anæsthesia,

against which there did not exist the then seemingly grave theological objections that were so vehemently urged against its *obstetrical* employment, and which made the triumph in this direction the more difficult, and yet for this very reason the more to be commemorated.

THE RUSH MEDALS.

I have thus briefly presented Dr. Rush's claim to be honored by you, gentlemen, the teachers, cultivators, and practitioners of midwifery in the United States. Eventually, the memorial determined upon by this Association, in collecting the funds for which Medical Director Gihon, U. S. N., Dr. Geo. H. Rohé of Baltimore, ex-President Toner of Washington, and others of your Committee, have labored so faithfully, will be erected, and mankind will be reminded of "the Sydenham of America."²³ It remains for you to influence the profession toward the hastening of that time, marking at last "the Rush renaissance."²⁴ Meanwhile, that you may contemplate the features of the man himself, and appreciate the better the parallel that has been drawn between him and the great light of British medicine, I show you reproductions, from my own collection, of the two medals that have been struck in his honor at the U. S. Mint, of which he was long the Treasurer. They have been photographed for me from the originals, greatly enlarged, by my friend, Mr. Clarence Stanhope, of Newport, and I wish that copies could be placed in every medical, historical and public library in the country. The following are their descriptions:

1. Obverse. Bust, with queue, to left; a neck cloth under the collar. Beneath shoulder, F(ürst). Inscription: BENJAMIN RUSH, M.D., OF PHILADELPHIA.²⁵
- Reverse. A river, flowing from side to side forwards; in background, the setting sun, with clouds and mountains. Large trees in foreground, to right; to the left, SYDENHAM. In front, a block of stone, on which: READ—THINK—OBSERVE. Upon this, an open book. Beneath, to right: M(ozitz). FÜRST FEC. Exergue: ANNO. MDCCCVIII.

Silver (?), bronze, lead. 41 mm. 27.

The legend upon the reverse is from the close of his lecture, "On the Causes which have Retarded the Progress of Medicine." It is very similar to the "HEAR. READ. MARK. LEARN." upon an old medal of Christ's Hospital School, London, which is in my collection, in silver.

I have this medal of Dr. Rush both in bronze and lead. It is also at the Surgeon-General's Office at Washington, from the Lee Collection, in the former of these metals. It is very rare, and seems unknown to all numismatic writers. The die cutter, Fürst, was at the time an assistant engraver at the U. S. Mint.

²² The above term was first applied to Rush by his friend and biographer, Dr. Lettsom, of London. Loc. cit., London, 1815, pp. 3, 15.

²³ C. K. Mills. "Benjamin Rush and American Psychiatry." *Medico-Legal Journal*, December, 1886; Reprint. p. 2.

²⁴ "Modern History of Anæsthesia." (Anæsthesia, Hospitalism, etc. Edited by Sir W. G. Simpson, Bart.) Edinburgh, 1871, p. 41.

2. Obverse as in preceding.

Reverse. An altar, upon which rests an open book. In front, upon an oval panel, a bust of Æsculapius, with serpent-encircled staff. In another panel, at right, an urn. Beneath, to right: M. Furst Rec. Exergue: A(nno). MDCCCVIII.

Bronze, gilt bronze. 41 mm. 27.

Unknown to all writers upon medals. Still rarer than the preceding. It is in the Lee Collection and my own.

I have endeavored, but thus far in vain, to ascertain the history of these medals, and have been aided in my inquiries by Dr. Wm. Pepper, of Philadelphia, through whom I have received letters from Hon. A. London Snowden, long Superintendent of the U. S. Mint, and Mr. R. A. McClure, in charge of the Mint Cabinet. Col. Snowden has written, under date of March 21, 1889: "The Dr. Rush medal is not in the Mint Cabinet, and its history is obscure," and again upon the 27th, "I have taken considerable trouble to seek information from several sources, but thus far without any particular success." Mr. McClure, like Col. Snowden, was aware of the existence of but the first of the medals described above, and this he had seen at Mr. Alexander Biddle's. He reports: "Mr. Biddle did not succeed in finding any information or clue to the occasion of the striking of the Rush medal. I went to the Ridgway and Philadelphia Libraries, and the rooms of the Historical and Philosophical Societies, and looked over the file of two daily papers of 1808, the year in which the medal was struck, and found nothing." Messrs. Bailey, Banks & Biddle, prominent medallist artists of Philadelphia, have also been unable to furnish me with the slightest information. From this will be perceived the extreme rarity of the medals, and the fact that though both of them were struck at the Mint, the very existence of one of the two had passed from the knowledge of the Mint authorities. Of the first of them, there are said to be known two specimens in silver. It was remarked several years ago,²⁵ before the revival of an interest in medical numismatics, that these would be cheap at \$20 each. They would probably now bring very much more than this sum, and it is to be hoped that they have been secured for permanent preservation by medical institutions, though as to this I am as yet uncertain.

The portrait bust of Dr. Rush upon the medals was undoubtedly from sittings for the purpose, since they were executed five years before his death. It will therefore be of service, in connection with the familiar painting by Sully, in giving his exact features for the monument undertaken by the Association, when at last its construction shall be commenced.

In conclusion, a brief quotation from the "Elegiac Poem on the Death of Dr. Rush," may not seem out of place:

"Unchecked by ridicule, unawed by rules,
Fallacious dogmas, and the pride of schools;
With all the ardor of aspiring youth,
From fair experiment, the test of truth,
Deep searching Rush ingenious reasonings drew,
Bold to defend, and potent to subdue!
Determined truth by every mean to try,
Where others dared not gaze, 'twas his to fly;
He rescued truth from mad opinion's maze,
And caught from Science her inspiring rays;
Beamed o'er the healing art a radiant light,
Like orient phosphor o'er the mists of night."²⁶

How appropriate beyond the intention of its writer, who was but lamenting his decease, is the following, to Rush's supreme anticipation of the discovery and application of artificially induced anaesthesia to midwifery!

"Thy light, bright Science, to this sphere confined,
Was far too little for his mighty mind!
Which soared beyond this world, and broke away
From darkened nature to a world of day."²⁷

(The above paper was read before the Section of Obstetrics and the Diseases of Women, and by vote of the Section was referred to the Association itself, with the recommendation that it be read in general session also, as containing matter of interest to all practitioners of medicine.)

MODERN SANITARY CONDITIONS.

Read, by invitation, before the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY GEORGE E. WARING, JR.,
OF NEWPORT, R. I.

Early in 1855, moved by the most distressing condition of the sick and wounded in the hospitals of the Crimean army, Lord Panmure commissioned Dr. Sutherland, Dr. Gavin and Mr. Rawlinson to proceed to the Bosphorus and to the Crimea, and to take instant measures for the improvement of the sanitary state of those sadly crowded buildings.

Mr. Rawlinson, a man of sound sense, great practical skill, and a genius for direct and positive action, and then in the prime of life, was quick to apply to the appalling conditions with which he was confronted those well-trained abilities which had already marked him, and which still mark him, as one of the great lights of Sanitary Engineering.

The order was issued on the 19th of February. In less than three weeks the work at Scutari was already progressing and within a month a marked effect was obvious.

Kinglake says: "Then came on a change which, if only it had been preceded by mummery instead of ventilation and drainage and pure water supply, would have easily passed for a miracle. Down went the rate of mortality. Having already gone down from the terrible February rate of 42 per cent. to 31, it descended in the next fortnight to 14; in the next twenty days to 10;

²⁵ American Journal of Numismatics, 1885, p. 70.

²⁶ Loc. cit., Philadelphia, 1813, p. 15.

²⁷ Ibid., p. 31.

in the next to 5; in the next to 4; and finally, in the next twenty days, ending on the 30th of June, 1855, to scarcely more than 2."¹

This result was achieved by physical changes effected by intelligent engineering.

Dr. Billings, in his work for the Tenth Census of the United States, estimates the death-rate of the whole country at about 18 per 1000. It cannot be questioned that a proper regulation of the universal conditions of human life throughout the whole country would reduce this rate to 12 per 1000; saving every year, on the basis of the present population, not fewer than 365,000 lives which are now sacrificed to neglected filth, with its attendant contamination of the soil on which we live, of the air we breathe, of the food we eat, and of the water we drink.

Disregarding for the moment the enormous loss of power and loss of heart, and the manifold suffering incident to the sickness these deaths imply, we are confronted with the stupendous and disgraceful fact that in these prosperous and intelligent United States, of which we boast as the home of the highest modern civilization, one thousand human beings are stricken to death every day, cruelly, needlessly, wickedly—solely because of the lack of that which it needs only intelligent direction to secure. We thus wantonly destroy every three years more lives than were sacrificed, directly and indirectly, by both North and South during the War of the Rebellion. The sum now paid for pensions during three years, if intelligently administered, would cover the improvements required to prevent these deaths.

The epidemic of yellow fever in 1878 aroused the active sympathies of the Nation, and even frightened Congress into an unwonted momentary activity in behalf of the life and health of the people. The deaths from that epidemic did not amount to more than 18,000. The lives wantonly sacrificed to preventable disease amount to that number every eighteen days.

The whole country now stands aghast at the fearful sacrifice of life caused by the bursting of the dam above Johnstown. Estimates of the actual loss are necessarily vague, but it is entirely safe to say that thrice each month, thirty-six times each year, as many persons die lingering and painful deaths, caused by a universal neglect on the part of the whole people that is no less culpable than was the neglect of those charged with the construction and care of the disastrous dam.

We stand, one and all, we and our wives and children, subject to an ever-present and entirely avoidable danger of a sort that every man, woman and child in every enlightened country has a just right to be protected against.

Such protection it is quite within the power of the people themselves to secure, but the people themselves must secure it. All that we can do is to point out the way and to emphasize the necessity. The huge task is one whose doing can be compassed only by the force of an aroused public opinion; our task, hardly less huge, it must be to awaken and vivify that opinion.

What is to be done relates chiefly to the complete removal of the organic wastes of life before the beginning of putrefaction, and the ultimate disposal of these wastes, by methods now understood, in such a way as to reduce them to their elements without such contamination of earth, water or air as now reacts so fatally on the population. The process would be simple. Its seriousness arises only from the wide and universal dissemination of points needing attention, and from the enormous aggregate of cases to be treated. The adequate sanitary improvement would involve drainage and garbage removal, water supply, and some improvement of ventilation. By drainage, we mean, in this connection, the removal of filth in sufficient currents of water, and this is by far the most important thing to be done. Accumulations of filth not susceptible of removal in water must be removed in other ways or destroyed. While it is obviously necessary to bring water from a distance for the supply of those who live in large towns, village communities may safely rely on well-water, if only the water of the ground be protected against contamination, as it would be by the complete removal and proper disposal of organic wastes. So also, with the prevention of putrefaction in and about habitations, the need for costly artificial ventilation will be greatly reduced. The freedom with which air passes not only through the imperfections of our buildings, but through the very walls of our houses, is shown to suffice for the favoring of health and longevity, by the great number of aged and robust persons habitually living in an atmosphere that would seem intolerable to one accustomed to better conditions. It is not to be understood that the most complete ventilation is not desirable, only that if all waste matters be properly removed and disposed of, and if the water supply be made pure, a reduction of the death-rate to 12 per 1000 might fairly be expected, even without such ventilation as any sanitarian would think desirable.

The foregoing announcement is based on no untried theory. We know by experience that under wholesome conditions of life a general death-rate of 12 to 1000 can be reached in towns, and that a lower rate is possible in the country. We know that where organic refuse, including that which is voided from our persons, is completely removed without the possibility of fouling the surface or the interior spaces of the soil, without the possibility of contaminating our supplies

¹ The exact figures are 42.7, 31.5, 14.4, 10.7, 5.2, 4.3, 2.2. The average rate in military hospitals in England was 2.9.

of water and food, and without the possibility of sending the gaseous products of its putrefaction into the atmosphere that we breathe, the conditions requisite for the maintenance of the zymotic diseases are substantially annihilated, and a great cause of *malaise*, debility and suffering is averted. If the improvement includes, as it often will in an incidental way, the correction of hygrometric conditions tending to the production of malaria, the relief will be greatly magnified.

It may, therefore, safely be asserted, in the light of what we know of improvements that have been effected by simple changes of physical conditions, that a proper application of the sanitary arts of the engineer would of itself suffice to save to us the thousand daily lives now thrown away, and to multiply greatly the happiness and efficiency of myriads whose sickness, though not mortal, is grievously painful and incapacitating.

It is, of course, not to be understood that even the zymotic diseases, which are chiefly referred to in this paper, are to be withdrawn from the domain of the physician and entrusted to the unaided efforts of the engineer. The great advance in sanitary achievement in the past fifteen years has taken place not in the field, but in the laboratory; it is in your profession, not in ours, that the great wonders have been wrought.

It has long been considered that the rough measures of the drain builder and the water purveyor were effective in warding off much disease and death, but the knowledge under which our results have been achieved has been very largely of an empirical character. It was only when the biologist entered the arena that real knowledge of the subject began, and although the biologist is yet only at the portals of the vast temple of knowledge to which he has so lately found the key, he has gone far enough to indicate quite clearly the reasons for the success of sanitary engineering, and even to justify a conviction that he has, dimly perhaps, but surely, indicated a new way of escape from much of our existing physical suffering and death.

How many of our diseases are caused by the invasion of specific organisms we are far from knowing. We do know that some of them are so caused, and the study of the life history of pathogenic microbes has already indicated more than a possibility, not only that their invasion may be prevented by suitable measures, but also that after the invasion of our bodies they may be, by measures yet to be defined, rendered powerless to perform their appointed work of injury or destruction. It would indeed almost seem that the elixir, not perhaps of life but of health, will yet be shown to lie in the death potion of the microscopic invaders of our blood and tissues. Until this is definitely shown, and probably still more after it has been shown, your profession and ours must

work hand in hand to stay the tide of destruction by which the community is not only menaced, but to which it is actually subject, and from which it is constantly suffering.

You need not now be detained for a discussion of the processes by which the great end in view may be accomplished. These are tolerably well known and are to become better known day by day. What is necessary is that you and not only you, but all of your professional brethren, and not only they, but all who are subject to their professional ministration and to their influence shall be made to know and to feel that this great calamity is upon us and has been upon us in constantly decreasing degree for all time, and that it lies within our power to hasten its decrease in the future until the conditions of life of this whole people shall have been made what they might be and should be.

The whole purpose of this paper is to impress upon you the commanding need for action—an action that shall bring modern sanitary conditions into conformity with modern civilization.

THE INFLUENCE OF MEDICAL JOURNALS ON THE MARCH OF SCIENCE.

Read before the American Medical Editors' Association at Newport.

BY T. D. CROTHERS, M.D.,
OF HARTFORD, CONN.

In January, 1889, there were published in this country and Canada, 142 journals which claimed to represent the science and art of medicine.

The influence these journals have on the march of medical science opens up a field of unusual interest.

The profession are every year depending more and more on medical journals for contemporaneous history, criticism, and guidance, and every year these journals are giving more accurate records of the movements of science, of the rise and fall of theories, of the evolutions and revolutions that follow along the line of medical scientific discovery.

The time has come when accurate conceptions and misconceptions of truth must seek a hearing through the press. Books are too slow, pamphlets are not read, the medical journals must present and defend the facts and theories continuously and persistently. Any theory supported in books alone has little chance of attracting attention. No matter how absurd the theory may be, if it has an organ in the press, it will be heard. Hence, to-day, in the list of 142 journals we can trace a history of the empiric stage of science; we can see the superstition and credulity and the quackery which gathers about the birth of all truth; we can see the psychological growth and conflict of truth and error, and realize that all these journals of all degrees and kinds are un-

consciously writing the history of the world's progress. We who are journalists, each hope that our work approximates to that ideal of absolute truth that we are striving after, above the levels of transient medical journalism, and along the very front lines of progress. The reality of our progress is in some degree realized by the constant appearance in the medical press of the latest discoveries and truths of medicine, and we feel that in some measure the march of science takes its shape and direction from our efforts. We who are the actors on this stage cannot fully realize our individual influence in the play, nor can we judge from the applause of the audience. We are too near each other, and our mental vision is too limited; but we can discern the imperfections of our work, and prompt each other from the wings. When some of our enthusiastic brothers find themselves overwhelmed with confusion by the discovery of having advocated some absurd theory, or defended some new remedy which proves to be inferior to cold water, we can cover his exit with silence and charity. But when some of our brothers are attacked with dogmatism and have delusions that they are the central orbs of all science, or that other strange fatal disease, and its opposite, icy conservatism and frothy freshness, we put on garments of mourning long before life is extinct.

Bowing on the stage, or lounging in the wings, gives us some clear views of human nature and science. The search for truth and the effort to present it, brings out all the stars, the tragedians, the comedians, the supporters, and the army of figure heads.

As evolutionary optimists, we can catch glimpses of a progressive movement ever onward, although in our work this march of science seems like a confused advance and retrograde alternately. The incessant revolutions of theories and practices casts a shadow over our dogmatism and boasted exact experience, making it clear that the great drama of which we are actors and historians is beyond our present comprehension. The influence of medical journalism on the march of science, is also beyond our present comprehension. We can only draw some outline facts and apparent conclusions of this influence from a general study of the journals which claim to represent the science of medicine to-day. Of the 142 journals which began the year, death has claimed a certain number, but recruits have promptly filled their places, and it is safe to say that there are no vacancies. But the long felt want is still urged. Journals come, and journals go, and the procession goes on.

Among the real scientific journals three distinct classes appear: The *general*, the *special*, and the *encyclopedic* journals.

The *general journals* aim to represent the entire field of medicine, to give papers and discus-

sions covering every line of medical research. The claim of being practical and addressing themselves solely to the busy physician is often contradicted by the work. Such journals like the single volume text-books fail, because the subject has outgrown the limits they would place upon them. A single volume text-book on practice or surgery can only be an outline view, more or less imperfect. So a general journal which attempts to spread the entire field of medicine before its readers, must do so in outline, and fail in many respects. The journals of to-day cannot do what was possible a quarter of a century ago. The heavy quarterlies are fast disappearing, and even the monthly is losing ground. Our journals must come weekly, and not far away the medical dailies will appear.

The journals that are taken by the general profession to-day must come often, and bring theory and practical experience; they must in newspaper parlance "boil down" every thing, and discriminate between the facts and fancies of authors. The general journal of to-day fails when its pages are loaded down with minute descriptions of disease and the exact action of remedies on the organism. It fails when the editorials are acrimonious and dogmatic. It fails when it dwindles into a newspaper of personal items and gossip, and apes the secular papers in tone and character. It fails when it assumes that medical science has advanced to the frontiers of positive truth in any direction. When the ideal general journal comes for the mass of physicians, it will be a weekly and daily.

It will be strictly impersonal and reflect the conclusions and results of scientific study up to the present.

It will avoid the ranks of dogmatism and credulity, and follow a line of frank conservatism towards all science. It will aim to find not the practical alone, but the literal roads for the discovery of the probable facts and laws of science.

The ideal journal will arouse and stimulate further inquiry, and the reader will never be satisfied with the conclusions which it presents. The ideal journal will be an outline of what appear to be the best sustained facts concerning the problems of medicine. Such a journal must have concentrated power and force of editorial talent, to write the history of the medical advances truthfully and clearly to-day. Such work helps on the march of science and is growing more and more essential.

The *journals devoted to special fields* of medicine occupy a different position.

They give the observations of the picket-guards of science, the impression of men who follow up a special line of research. They make the first surveys of new countries, which of course are imperfect and lacking in many details.

The probable facts and their conclusions are

only tentative, and are given for the purpose of exciting inquiry and examination.

The specialists' journals are mapping out the topography of new countries, and making observations of its flora and fauna, which must be corrected by the armies of the rear, and more than all other journals do they influence the growth of science, and are in turn influenced by it. The multiplication of specialists' journals comes from the rapid widening of the fields of medical study; it shows clearly that the day for the general journal is drawing to a close; that like the single volume text-books, the science of medicine can no more be concentrated in one journal. In the twenty or more special journals that occupy the field in this country, this fact is more and more obvious.

From the smallest and most imperfect beginnings they are slowly and surely coming to "the front," and in the twentieth century the science of medicine will be studied in these journals. The specialist journals of to-day, with all their weakness and narrowness of work, are nearer and more influential in the real progress of science. They push on the exploration, from the mountain tops into the valleys, and along the river bottoms and plains of science. They map out the field for minute and exhaustive study, and give the results of individual work as no other journal can. Such journals cannot exist alone commercial standards of value; they come in obedience to demands of a special audience; their readers are contemporaries, workers along the same lines of research. They can only live where science is most aggressive, most active and most advanced. The general journal is of the past, the special journal is of the future. The one is a survival, the other is an evolution. The great text-books on the different branches of medicine are more and more the outgrowth of the work of special journals, the condensation and elaboration of views that have appeared first in such journals. On the growth and development of special journals, many of the great problems of medical science will depend.

The last class of journals that are prominent are the cyclopædial journals. They essay to give condensed summaries of the progress in all departments of medicine. Many general journals combine this feature with their work.

The ideal journal, or book, that will give a fair view of the medical progress of to-day is yet to come.

The attempts in this field are more promising than real. The readers of this class of literature and journals are filled with conflicting emotions concerning the near approach of a medical millennium, and the disappearance of the good old facts of our fathers and the humiliating thought that all truth comes from over the sea. No true science in this American *Nazareth*. The

ideal journal to occupy this field will be a great power in the evolutionary march. The ideal book giving a correct view of the progress is far beyond the journal or the special department in the journals.

These three distinct classes of journals appear either single or combined in all the medical papers that claim to represent the science.

Medical journals are slowly emerging from the stage of childhood, in which the personal views of its managers are more prominent and emphatic than facts of science; a stage in which the intense personality of certain men and colleges, or teachers, are fixed points about which all other truth must revolve. Every advance is judged from this point of view. Such journals resolve the science and art of medicine into fixed laws, that never change. They stand out in the great march as obstructive, like the Bourbon family, they never learn anything and never forget anything.

The *mutual admiration period* is another phase of the childhood of journalism. Journals of this class are passing away, and are very interesting psychological studies. The personal news items, and comments stage is another sign of youth in journalism. Sneering doubts, and fulsome endorsement of every new view of science are equally unscientific. We might go on and tabulate a long list of signs of youth and feebleness in the medical press, but a little higher view will show us that this is part of the natural history of the sudden birth of a small army of medical journals, who are each struggling to represent the whole or some part of this great ever-widening land of science.

Medical journals, like the science which it represents, are growths or evolutions from the lower to the higher, or devolutions from the lower still farther back. Medical advance is thoroughly revolutionary, and our best facts to-day disappear to-morrow, and give place to newer, wider views. Our journals ought to be histories of this restless change. Histories above all personal interest or motives, except to give the most probable facts and conclusions, sustained by all the evidence at our command.

As medical journalists we can never represent or influence science by allowing personal dogmatism or personal gossip criticism to appear in our work. We can never represent or influence science by endorsing an assumption that any one range of facts comprise the whole truth, or that the last and final truth is bound up in any theory. We can never represent or influence science by a partisan support or defence of any minute statement of disease or its exact laws, or the action of drugs on the system, or theories of physiology and psychology. *Medical journalism* to represent and influence science *must assume* the position of a judge, hear all the evidence, and then present

to its readers those facts which seem best supported by research, theory and experience. Medical journalism to represent and influence science *must discriminate between* the probable and the improbable, between the statements and theories of men, who trust to fancy or to inductive reasoning, must discriminate between facts that are apparent or assumed, and insist that the record of sciences to-day have some support from the facts of yesterday. If this cannot be, the record must have an assemblage of probable evidence, that shall give it position and recognition.

Medical journalism to represent and influence science can never be a newspaper or a transient journal of the hour. It must rise to the level of the great laws which govern the evolution and dissolution of humanity. The individuality of the discoverer is as nothing compared with his discoveries. The truths of science require a higher standard of representation than the follies and accidents of life. While the 142 journals in this country that claim to represent medicine are in many instances sad reflections of so-called science, yet the American medical press as a whole is full of hopeful promise. While the quarterlies are doomed, and the monthlies are becoming more and more uncertain, the weeklies are growing in freshness and vigor. A new era is dawning for journalism. Both authors and editors must give the readers the clearest, briefest facts and evidence to sustain them. The theories and opinions of the fathers in medicine have of themselves no longer any weight, unless they have a direct bearing on the present. Papers loaded down with authorities are becoming more and more pedantic and absurd. There are no absolute facts in medicine, everything is relative, and good only for the present.

The world is full of working problems, which, like steps on a ladder, are means for higher and wider views of truth. In journalism we get the first surveys, in books, the corrected conclusions, good only for this day and generation.

Medical journalism reflects more and more positively the true spirit of the march of science in this closing century; not the march of science in Germany, France or England, but the movement here in our own country, free from the blighting conservatism of the past, free from time-worn theories, and empiric conceptions that are moss-covered with age and respectability. Free to question every assumed fact, and demand the reasons for its existence.

Medical journalism in this country is growing stronger and more influential every year. We are gaining greater power with every advance, and realizing more clearly that medical science is an incessant search for truth, that widens with every step forward. Both as historians and explorers we are pressing on into the unknown, fully assured that greater facts and truths are yet to come from broad scientific work.

MEDICAL PROGRESS.

THE TREATMENT OF INSOMNIA.—In his concluding remarks in his paper on this subject (read in the Society of Internal Medicine), IAS·TROWITZ, of Berlin, considers the following remedial applications: *Alcohol* may be employed in the form of beer, wine, cognac, etc., and it may be used especially in cases where the other soporific remedies would occasion considerable weakness of the heart. In patients subject to chronic insomnia alcohol should only be used in the light forms of psychical excitement, thus a few glasses of beer may be given at bedtime. Alcohol should be avoided in lypemania and hypochondria, because it increases the morning depression common in these cases.

Opium and morphine. I regard the alkaloids as the true soporifics, contrary to the general sentiment, which regards them as simply calming remedies. In spite of the useful action which antipyrin, phenacetin, etc., exert in pain, we cannot ignore the claims of morphine, which has also a tonic action. Thus sportsmen employ it to stimulate themselves, and inject it into their horses to increase their resistance to fatigue. The tonic action of morphine explains its use in the different states of morbid terror and in the insomnia of anæmic subjects. It must be cautiously administered in bronchitis, pneumonia and heart disease. In chronic insomnia it is contraindicated, for the morphine habit is much more difficult to combat than that of chloral, paraldehyde and sulphonal. In certain forms of insomnia—in the senile form, in those which depend upon an intestinal affection, and in chronic lypemania, opium acts better than morphine. Narceine in doses of 0.1 to 0.15 centigrams is a good soporific. Codeine in the same doses sometimes produces convulsions.

Chloral is unquestionably the most powerful soporific, but in large doses it lowers blood pressure considerably and paralyzes the heart. Chloral is our best remedy in delirium tremens and epilepsy. According to Liebreich it is contraindicated in diseases of the heart and hysteria. In my opinion it is also contraindicated in cases where there is considerable adhesion of the lungs, as well as in those cases where, after a dose of 4 grams, we do not find that excitement which is manifested in part by contraction of the pupils. In cases where it is active in small doses chloral may be employed to as good advantage in chronic insomnia as in the acute form. It is well to add a little morphine to the dose, for, by retarding the elimination of the chloral, it renders the action of the latter more permanent.

Paraldehyde does not weaken the heart, but when employed for a long time it manifests its close relation to alcohol by a chronic intoxication anal-

ogous to the grave forms of delirium tremens. Because of its disagreeable taste and its elimination by the lungs paraldehyde is contraindicated in bronchitis and dyspepsia. It is indicated in hysteria (because its taste *is* disagreeable), and in icterus accompanied with pruritus. It has also been recommended in cardiac stenosis and rejected in dilatation of the right heart and arterio-sclerosis. Paraldehyde acts very well in insomnia from emotional causes and in epileptic excitement, but its action is less favorable in the four conditions of psychical excitation and morbid fear.

Hydrate of amyl is a good soporific free from all danger. It sometimes exerts a bad influence on the stomach, however, and it is then necessary to give it by injection. It has been recommended in typhoid fever, in heart disease, as a remedy for cough (when paraldehyde is contraindicated), and as a soothing remedy in cholelithiasis.

Sulphonal enjoys the great advantage of being tasteless and inodorous, which allows its administration without the knowledge of recalcitrant patients. It exerts no influence upon the heart. In acute diseases its action is not sufficiently rapid and it has no influence upon pain. It is, however, an excellent remedy in the insomnia of motor origin, as, for example, in chorea and all forms of mania. I administer it often in small sedative doses during the day and at evening give a large soporific dose. The prolonged use of sulphonal produces a peculiar condition of weakness in the limbs, but unaccompanied by real ataxia. For this reason it is necessary to discontinue its use from time to time.

As regards the inconvenience, danger and intensity of their soporific action, the remedies of which I have spoken may be classified according to the following series: As regards their inconvenience and danger; morphine, chloral, hydrate of amyl, paraldehyde, sulphonal. As regards their efficacy; chloral, sulphonal, hydrate of amyl, paraldehyde, morphine.

Thus we see that *sulphonal* is the least dangerous of all, while at the same time it occupies the second place as regards soporific action.—*Gaz. Méd. de Liège*, July 18, 1889.

ABDOMINAL SECTION FOR RELIEF OF INTESTINAL OBSTRUCTION.—PROF. OBALINSKI, of Krakow, in his review of the history of intestinal obstruction, shows that, except for incarcerated hernia, surgical treatment is confined almost entirely to the present century and more particularly to the present decade. He has performed abdominal section in 38 cases of intestinal occlusion from almost every possible cause; of these 15, or 40 per cent., recovered, and excluding 7 hopeless cases, the recoveries would reach nearly 50 per cent. In about 50 per cent. the diagnosis, both as to location and character of obstruction, was proven to be accurate. He insists upon a consid-

eration of the following points in the history of each case: 1, duration; 2, rapidity; 3, number of attacks; 4, predisposing disease; 5, direct cause, traumatic or otherwise; 6, amount of pain; 7, whether pregnant; 8, general condition of patient (whether exhausted or not); 9, form of abdomen—spherical form in obstruction of cæcal, square form, of lower end of colon; marked tympanitis indicates an acute, a slighter amount a chronic attack; 10, marked peristaltic action indicates a mechanical, absence of this a functional obstruction; 11, palpation, recognition of painful spot; 12, vomiting and absence of flatus indicate obstruction but do not locate it; 13, decrease in urine may indicate peritonitis; 14, manual examination of rectum is sometimes useful. With all of these aids a certain diagnosis is possible only in one-third of all cases. In the other two-thirds he advises an *early* exploratory, median incision. If the intestines are much distended they are taken out of the cavity, and in extreme cases a transverse incision is made into the gut, the contents carefully evacuated, the opening closed and the intestine replaced. Whenever possible the obstruction is removed; if not, an artificial anus is made above obstruction.—*Archiv für Klinische Chirurgie*, Vol. 38, Heft. 2.

A CASE OF INTESTINAL OBSTRUCTION AND GANGRENE.—DR. W. A. BRIGGS, of Sacramento, reports a case of intestinal obstruction and gangrene. The patient applied for treatment on June 13, 1889, complaining of vomiting and paroxysmal pain. There was no abdominal distension and no tenderness on pressure. On the next day there was stercoraceous vomiting and abdominal pain. The patient had had a similar attack three weeks previously. On the 15th there was less pain, but a tumor had appeared in the right iliac region, accompanied by abdominal distension. On the same day a laparotomy was made. On opening the peritoneum turbid serum welled up and a gangrenous odor was manifested. The peritoneum was inflamed throughout. An elastic tumor of the size of an orange occupied what seemed to be the site of the cæcum; this was formed by a segment of small intestine constricted by adherent bands. A gangrenous segment of the intestine 8 inches in length was found and resected, when it was discovered that there was a second gangrenous tract 6 inches long, separated from the first gangrenous portion by 3 inches of healthy tissue. These two portions were accordingly included in the resection. The bowel was united by a double row of catgut sutures—continuous as regarded the mucous membrane, interrupted as regarded the peritoneum. The mesentery was brought together with interrupted sutures. Patient died in collapse two and one-half hours after the operation. The operator directs attention to the following points: 1. The ease with which death

might have been averted by timely operation. 2. The slight constitutional disturbance prior to actual gangrene. Three days after complete obstruction and two days after the supervention of stercoraceous vomiting, the patient traveled thirty-five miles, and the day after walked two miles. 3. Were the peritoneal bands causing the constriction of so recent origin as the attack three weeks prior to the final one?—*Occidental Medical Times*.

PHYSIOLOGICAL ACTION OF SACCHARIN.—PETSCHKE and ZERNER have conducted a series of experiments with saccharin with the object of studying its action upon the organism and its therapeutical effects. Their first investigations concerned its effects upon pytaline pepsin and the ferment of the pancreas. Saccharin in concentrated solution impedes the action of pytaline upon starch because of its acid reaction. If the solution of saccharin be neutralized or if its soda salt be employed the conversion of starch into dextrine and glucose takes place as usual. The action of pepsin is not changed by saccharin, it is merely retarded when in place of using a combination of soda and saccharin the latter is employed alone. Saccharin in powder dissolves slowly and does not allow the pepsin to exert its digestive action until solution takes place. Experiments upon the living subject show that saccharin in doses of from 0.05 to 0.30 grm. exerts no influence upon digestion. In doses of from 0.50 to 1 grm. it retards digestion when taken pure; its soda salt, which is more soluble, may be taken even in doses of 5 grm. without disturbing digestion. The action of saccharin on pepsin is *nil* when its soda salt is used, while saccharin in substance exerts an unfavorable action, because of its acid reaction. Petschke and Zerner reach the conclusion that saccharin should not be employed except when combined with soda. As a substitute for sugar saccharin may be taken for a long time without impairing the appetite or the patient's well-being. Saccharin is eliminated by the urine, but not by the saliva.

From a therapeutic standpoint Petschke and Zerner have employed saccharin in 50 cases, in doses of from 0.1 to 10 grm. Its antipyretic action is almost *nil*, as estimated by the action of the pulse, respiration and transpiration. They have never observed the supervention of albuminuria after the administration of saccharin even in invalids predisposed to nephritis. The antizymotic action of saccharin is especially manifested in cases of abnormal intestinal fermentation. No specific action of the remedy has ever been noted in any disease. In cystitis saccharin exerts no influence. In two cases of *otitis media purulenta* which resisted the action of boric acid the otorrhœa was cured in a few days. The most decided successes have been witnessed in dys-

pepsia and gastric disorders produced by abnormal fermentation. In doses of from 0.3 to 1 grm. every two hours, combined with irrigation of the stomach, saccharin soon ameliorates all symptoms of fermentation, which however reappear as soon as its administration is suspended. In diabetes the employment of saccharin, together with a suitable regimen, is soon followed by a rapid diminution of the quantity of sugar in the urine.—*Gaz. Méd. de Liège*, July 18, 1889.

DIABETES MELLITUS AFTER EXTIRPATION OF THE PANCREAS.—J. V. MERING and O. MINKOWSKY have made, in the laboratory of the medical clinic in Strassburg, a number of experiments the results of which are given by them as follows: Diabetes mellitus occurs in dogs after extirpation of the pancreas. It begins some time after operation and continues for weeks, without interruption, until death. Besides sugar in the urine, there was polyuria, intense thirst, excessive appetite, acute emaciation and debility despite abundant nourishment.

A dog, whose pancreas had been removed, and which had eaten nothing for 48 hours, passed urine containing from 5 to 6 per cent. of sugar. Another dog 8 kilogr. in weight, which was given nothing but meat, passed almost one liter of urine containing from 5 to 6 per cent. of sugar, every day. After adding grape-sugar to the food the proportion increased temporarily to 13 per cent., by far the larger portion of the sugar added to the food being excreted unchanged. It may also be mentioned that the urine of the animals operated upon contained noticeable quantities of acetone.

The proportion of sugar in the blood is largely increased; in one case it amounted to 0.30 per cent., in another 0.46 per cent. Glycogen disappears from the organs; it could be found neither in the liver nor in the muscles of a dog that had been diabetically affected for four weeks and was killed while digesting meat.

The solar ganglion was not injured in the operation, the diabetes being a direct result of the extirpation of the pancreas. Transfusion of blood from a diabetic dog into the veins of a healthy animal did not cause sugar-excretion in the latter. Finally, in animals without pancreas the resorption of fat is greatly impeded, the utilization of the albumen also seeming to be very imperfect.—*Centralblatt für Klinische Medizin*, No. 23, 1889.

ENURESIS.—DR. RICHARDS recommends a combination of bromide of potassium and tincture of belladonna in nocturnal incontinence. He reports two immediate cures in boys of 12 years where the affection had lasted from infancy. Ten grains of the bromide and fifteen or 20 minims of the tincture were given at night.—*British Medical Journal*, June 22, 1889.

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LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, SEPTEMBER 7, 1889.

THE TREATMENT OF LOCOMOTOR ATAXIA BY
SUSPENSION

Seven years have passed since Motchoutkowsky, of Odessa, after using Sayer's apparatus for the application of a plaster jacket to an ataxic patient suffering from Pott's disease, observed an improvement in the symptoms of his patient. Although he published, in the following year, the results of this treatment in sixteen cases of tabes, claiming favorable results in all but two, it was not until Charcot, in January of the present year, lent the weight of his authority to the method, that it attracted any general attention. Since then, observations have multiplied, and it may be considered the fashionable treatment. Although the status of any therapeutic measure in a disease of so protracted and irregular course can only be determined after much more prolonged observation than has been had in most of the cases thus far treated, the reported results have been, temporarily at least, so generally favorable, and the difficulty and risk of the treatment, under proper precautions, are so slight, that it would seem worthy of a general trial.

The only extensive statistics thus far published are those of Charcot, who had, in March, 1889, treated 114 cases of tabes by this method. Of these, sixty-four did not remain long enough under treatment to determine its effects. Of the remaining fifty, thirty-eight were decidedly benefited, seven unimproved, and in five cases, the effects were injurious.

In favorable cases, nearly all the troublesome symptoms of the disease are said to disappear,

wholly or in part. Coördination, sensibility and sexual power improve; control over the bladder is regained; lightning pains cease. The patellar reaction does not seem to have been recovered in the reported cases, and the degree of improvement varies greatly. It is not usually noticeable until the eighth or tenth suspension, and may be delayed as late as the twentieth. The permanence of the improvement must, for the present, be considered uncertain, although one of Motchoutkowsky's patients is said to be able to take long walks five years after the cessation of treatment.

The rationale of the treatment is not very evident. Experiments have shown that in the cadaver, at least, the vertebral canal is sufficiently elongated to exert slight traction upon the spinal cord by the nerve-roots, but why this should be beneficial is not clear. Althaus suggests that it may be due to the breaking up of adhesions in the meninges and neuroglia. For the present, the method must be considered empirical rather than scientific.

In view of the fact that two persons who have attempted to conduct the treatment on their own persons have died from asphyxia, and that death has occurred, apparently as the result of suspension in two other cases where it was practiced without medical supervision, it would seem advisable that when undertaken it should be conducted by the physician, and begun with caution. Pulmonary, cardiac and vascular disease, great debility and anæmia are held to be contra-indications.

It is probably not well to be too sanguine in our hopes from this or any other treatment. The operation of nerve-stretching for the same affection is not quite forgotten, although it seems to have passed into "innocuous desuetude" and the inflation treatment of phthisis seems to have pretty thoroughly collapsed. If even temporary comfort can be given to any large proportion of the sufferers from this disease, it will be a great boon to both physician and patient, and, so far, mitigate what has been one of the opprobria of medicine.

MEDICAL PERIODICALS.—It has been ascertained that the principal medical periodicals of the world number 266; 174 are published in the United States and 92 in all other countries.

A NEW DISCOVERY.

The successful disposition of sewage is the question of all-absorbing interest in nearly every large city in the world. Nowhere, perhaps, has there been a greater need, nor has the subject received elsewhere more able and critical study than in the city of London. Up to the date of the last month the royal commission on metropolitan sewage discharge have been unable to report any feasible plan for the purification of sewage by precipitation.

A MR. WOLLHEIM, of London, now claims to have discovered a method by which this result may be successfully accomplished. He utilizes certain organic bases belonging to the group of ammonia compounds in combination with lime. As the result of chemical reactions, a gaseous reagent is evolved to which he gives the name of "amminol." It is a powerful disinfectant and, as stated in the *London Times*, when introduced into sewage rapidly extirpates all microorganisms capable of causing putrefaction or disease. When thoroughly intermixed with sewage the effect is almost instantaneous, the putrid odor of the sewage being at once replaced by that of the reagent. In thirty minutes the liquid portion of the sewage can be discharged deodorized and sterilized with perfect safety.

According to reports made by DR. KLEIN, F.R.S., the disinfection as well as the deodorizing is complete. He states that a sample of sewage examined by him contained 2,400,000 organisms in a cubic centimetre, and that the affluent after treatment was absolutely free from all or any organisms. Dr. Klein suggests that the effects of the treatment on specific microorganisms such as bacillus anthracis, the cholera comma bacillus, the typhoid bacillus, the pneumonia bacillus, should be ascertained. We shall watch with special interest for the verification of Dr. Klein's experiments. If this new discovery can be utilized successfully it may prove to be one of the most important achievements of the present age. And if its germicidal power can be utilized in the destruction of the microbes producing specific diseases its value may be beyond any possible estimate. Its claim to our confidence will be absolute when this is fully verified.

A FORLORN HOPE.

His experimental work in previous years had

been such as to gain for the name of BROWN-SÉQUARD a prominent and permanent place in medical literature. In view of the reputation which he had thus worthily achieved, it is not singular that any views put forth by him should command immediate and critical attention. Again, he could hardly have struck a more responsive chord than when he gave assurance that the secret of perennial youth was at his command. If at last the dream of the poet and theme of the muse were to be realized, when age would be able at pleasure to take on its youth, what name or what claim could in a day command more world-wide attention. This alone is sufficient to account for the immediate and universal discussion of this question by pen and by press, by saints and by sinners alike.

But the possibility of immediate rejuvenation is so utterly at variance with all known laws, either biological or physiological, that we can only regard such a promulgation as the senseless vagary of one, enfeebled by age, and beyond question in present and pressing need of such rejuvenation. His utterances have seemed to us too absurd to warrant serious consideration in the columns of *THE JOURNAL*. For this reason we must decline to publish a score or more of letters, many of them witty and some of them wise, all bearing upon this same subject. We can by no means indulge this forlorn hope of life renewal.

In this connection we desire heartily to commend the forceful and timely utterances of the *Medical Record* in its issue of August 24 and the experimental study of the subject, as conducted by PROF. LOOMIS, and published in the same number of the *Record*, could hardly have been committed to better hands. But we confess to no little surprise that with such results as are there detailed Prof. Loomis should have reached such conclusions.

For the time, no doubt, the subject will command very general attention, and be seized upon by some as a stepping-stone to personal notoriety, and as a means of cheap advertising. For a time the victims of injudicious and unwarranted experimentation will suffer the penalties which are sure to follow, but later this theory also will be numbered with the delusions of the past, and the name of Brown-Séguard will hardly receive additional honor by reason of such connection.

BRAIN SURGERY.

DR. EDMOND SOUCHON, of New Orleans, has demonstrated by experiments on dogs a useful and, as it seems, a safe method of exploration of the brain for the purpose of locating pus cavities. To obviate the necessity of removing a large button of bone, as is usually done, by means of the ordinary trephine, he employs a watchmaker's drill, which makes an opening just large enough to admit a needle with a calibre about twice the size of an ordinary hypodermic syringe. This method permits one to make several tentative punctures with the infliction of comparatively little injury. In his experiments he made use of dogs, in which he found that four such operations of trephining and puncture, in a single animal, were unattended by noticeable effects. After the results of the first operations were obliterated the animals were kept at rest for two weeks, when the same operations were repeated, with similar results—no remote effects whatever being witnessed.

EDITORIAL NOTES.

HOME.

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE is now in session at Toronto.

THE AMERICAN ACADEMY OF MEDICINE will hold its annual meeting at Chicago on the 17th and 18th inst.

THE NATIONAL ASSOCIATION OF DENTAL FACULTIES at their recent meeting at Saratoga adopted the three-term course in all Colleges of the Association. This rule will go into effect after the session of 1891-2, and the terms not less than five months each.

MONEY FOR THE JOHNS HOPKINS UNIVERSITY.—The will of John W. McCoy, recently admitted to probate, makes the Johns Hopkins University the residuary legatee and bequeaths to that institution \$100,000. Mr. McCoy also leaves it his magnificent library, and gives to the Peabody Institute his collection of paintings. The rest of the estate, about \$150,000, is divided up among literary friends.

A CORRECTION.—We notice that a number of our contemporaries are publishing a statement to the effect that typhoid fever is epidemic in Chicago.

It is simply a misapprehension of facts. The only fever that Chicago is troubled with just now is the World's Fair Fever! It seems to have spread already beyond the limits of ordinary sanitary control, and evidently Congressional legislation will alone be equal to the emergency. We hardly look for its subsidence before the close of 1892.

SURGEON HARVEY E. BROWN, U. S. A., died August 20, at Jackson Barracks, near New Orleans. He was a son of Gen. Harvey Brown, of the regular army, and born in New York. He graduated from the University medical department in 1858. He was surgeon of volunteers from 1861 to 1863, and then became Assistant Surgeon, U. S. A.; became full Surgeon and Major in 1881. He was the author of a valuable compilation and historical sketch of the Medical Department of the Army from 1775 to 1873. He was identified with nearly every epidemic in the Gulf District for twenty-five years. His final disease was lingering and painful, due to consumption.

DR. HOLMES AT FOUR SCORE YEARS.—A despatch to the daily press says that Boston's typical son, Oliver Wendell Holmes, celebrated his 80th birthday on the 29th ult., and despite its informal character the anniversary was a most charming one. He spent the days at his summer home at Beverly Farms. This is a quiet place, liberally embowed in vines and flowers, and most suited to such a festival. The flowers outside the house were nearly equaled by those within, the gifts of friends, which had been sent in the early morning. From nine o'clock throughout the day until night fall there was a continuous succession of visitors, mainly from the neighboring north shore estates. The doctor, seated in his comfortable library, with his attractions and alluring furnishings, received all his friends with a bright and pleasant smile and hearty cordiality. His surroundings added much to the charm of the occasion, the room being a genuine-old-fashioned study of the kind our grandfathers loved, with a tall, quaint firescreen and open fireplace with its blazing logs resting on the ancient firedogs, whose polished brass standards reflected the careful housewife. The floor was covered with neat canton matting and a mammoth rug spread out before the fire. In one corner was a simple rolltop desk and in another a book-case

with the doctor's favorite authors convenient for ready access. The chief charm of the entire interior was its thorough homelikeness.

One of the many pleasant features of the day was the coming of the children. In the forenoon the boys and girls of Beverly Farms school to the number of twenty-six called in a body, and were given a most cordial reception, the doctor entering heartily into the feelings of his little friends, giving each a warm shake of the hand and his friendly smile. To each he presented a pretty bonbonnière filled with sweets, tied with a bright bit of ribbon, and bearing on its cover a miniature vignette of the poet, with his name beneath. The children of the neighborhood came in the afternoon, and the lovely, shaded roads and bypaths were filled with white clad little maidens going and coming. Besides flowers there were many other pretty souvenirs of the anniversary. Among them was a handsome cup, presented by lady friends of the doctor. It bore the following motto:

..... AUGUST, XXIX, MDCCCLXXXIX.

" 'Tis the heart's current lends the cup its glow,
Whate'er the fountain whence the draught may
flow."

—*Oliver Wendell Holmes.*

The pledge of friendship.
.....

The cup is of silver, lined with gold. During the day letters of congratulation were received from J. G. Whittier, George William Curtis, Charles Eliot Norton, and a large number of others.

A NEW TRI-STATE MEDICAL ASSOCIATION.—The following call has been issued by Frank Trester Smith, M.D., Chattanooga, Tenn., Secretary of Committee: "The members of the medical profession in Alabama, Georgia and Tennessee are requested to meet in Chattanooga on the third Tuesday in October, for the purpose of forming a Tri-State Medical Association. All will be admitted to the meeting of the Association, but the membership will be restricted to graduates of regular medical colleges in good standing."

This call is signed by committees from Jackson County, Ala., Medical Society; Chattanooga, Tenn., Medical Society; Cleveland, Tenn., Medical Society; Cartersville, Ga., Medical Society; Dalton, Ga., Medical Society. It is hoped that there will be a general turnout of the profession.

Papers of interest have been promised by prominent men.

This organization will be independent of all other societies. It will be an association of individual members of the Profession of Medicine, and will be managed in the interest of medical progress. The session will continue two days. Those desiring to read papers or exhibit specimens should notify the Secretary at an early date.

A circular will be issued in due time announcing the titles and authors of papers.

THE ONTARIO MEDICAL LIBRARY ASSOCIATION, at Toronto, is in its second year. It is energetic and ambitious. The cataloguing will be done on the plan of the Index catalogue of the Surgeon-General's Office at Washington. The trustees have established a bureau of nurses, and during the current year they expect to publish a complete physician's register for the city of Toronto.

DEATH FROM NICOTINE.—A case of excessive cigar smoking, followed by death, is given by Dr. B. W. Richardson in *Asclepiad* for May. A man, aged 35 years, of slight build, much worried by the cares of business, indulged in smoking almost continuously for twenty-four hours, and taking nothing but a little brandy and water. Within a period of twelve hours he smoked fourteen large strong cigars and forty cigarettes. He became prostrated, excited and tremulous, with loss of muscular power in lower extremities. At this point, the author was called in. Supporting treatment was ordered, but without avail; the loss of muscular power increased and extended to the upper part of body. Unconsciousness and convulsive symptoms set in and increased until the evening, when death took place by asphyxia, through accumulation of fluid in the bronchial passages. The author traces these conditions to nicotine poisoning. He concludes by stating that if he has to deal with another case of this nature, he will try the effects of transfusion.

DR. D. TILDEN BROWN.—The *New York World* of August 25, contains an interview with Dr. D. Tilden Brown, formerly at the head of the Bloomingdale Asylum, New York, who has been reported to have died in Europe. Dr. Brown is now farming and practicing in a limited field, a few miles distant from Chicago. There are a host of

former friends of Dr. Brown who will rejoice that he is alive and well, and that they need no longer speak of him as "the late Dr. Brown."

THE WATER SUPPLY OF PHILADELPHIA.—The *Philadelphia Inquirer* is responsible for the following: It states that it has caused a new investigation to be made concerning the alleged contamination of the Schuylkill River, which is one of the sources of the water supply of that city. It makes the statement that the river is "little better than an open sewer," since almost the whole distance from the coal mines to the Fairmount Waterworks may be found abundant agencies for pollution, in the unguarded admission of the drainage from hundreds and thousands of houses, farms and factories. The *Inquirer* makes an estimate that there is a population of not less than 250,000 persons, whose drainage more or less contributes to the fouling of the stream which gives drinking-water to a million of people. The onset of typhoid fever has been fully a month earlier than in most former years; there having been already reported more than 400 cases.

RUSH MONUMENT COMMITTEE.—We have received the following communication to which we invite the special attention of our readers: At the meeting of the Rush Monument Committee, held at Newport, R. I., on the 26th of June, last, Dr. D. C. Patterson, of Washington, D. C., was elected Treasurer, vice Dr. J. M. Toner, on nomination of the latter, who asked to be relieved of this portion of his duties as member of the Committee.

Notice is also given that the limitation of contributions having been removed sums of any amount will be received, and it is earnestly hoped that the enthusiastic and unanimous approval of the projected monument at the Newport meeting of the Association will find expression in prompt and liberal remittances, which should be addressed to DR. D. C. PATTERSON, Treasurer, 919 I St., N. W., Washington, D. C.

ALBERT L. GIHON, M.D., *Chairman*.

GEORGE H. ROHÉ, M.D., *Secretary*.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.—Our reader will bear in mind that the annual meeting of this Association will be held at Evansville, Ind., on the 10th, 11th, and 12th inst., and rates have been placed at a fare and a third on all the roads centering at that point.

FOREIGN.

PASTEUR is now a baron and Edison a count.

THE EMPEROR OF AUSTRIA is establishing sterilizing apparatus on a large scale for the gratuitous preparation of milk for the children of the poor.

COOKING BY ELECTRICITY.—The *Scientific American* says: The Hotel Bernina, at Samaden, has for some time been lighted with electricity, power being supplied by a waterfall. As during the day the power is not required for lighting, and is therefore running to waste, the proprietor of the hotel has hit upon the idea of utilizing the current for cooking when it is not required for lighting, and an experimental cooking apparatus has been constructed. This contains German silver resistance coils, which are brought to a red heat by the current, and it has been found possible to perform all the ordinary cooking operations in a range fitted with a series of such coils.

IN GREAT BRITAIN Dr. E. McDowell Cosgrove has been appointed physician to Mercer's Hospital, Dublin. There are upwards of 140 writers on the editorial staff of the *British Medical Journal*. The Prince of Wales is still suffering from a gouty affection of the leg. The citizens of Perth are agitated over a possible contamination of their water supply. Scarlet fever is prevalent in Birmingham.

DIET IN CASES OF FOREIGN BODY IN THE ALIMENTARY CANAL.—At a recent meeting of the Société Vaudoise de Médecine, Dr. Roux, of Lausanne, communicated the case of a woman who, having undergone Schoenborn's plastic operation on the soft palate (destroyed by syphilis), swallowed a curved needle fixed in the retro-pharyngeal flap. She was treated by feeding with potatoes alone, in large quantities, with the result that the foreign body was discharged with feces on the third day, without having caused any unpleasant symptoms from the first to last.—*British Medical Journal*.

COMPULSORY NOTIFICATION.—Dr. A. C. Munro, in the London *Lancet*, presents data showing that in the little town of Jarrow, England, the system of compulsory notification has been the means of saving, during the last ten years, an average of eighty lives and 1,000 cases of sickness per annum.

TOPICS OF THE WEEK.

THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION. ENDORSEMENT OF THE BRITISH MEDICAL JOURNAL.

The recent meeting of our associated *confrères* across the Atlantic was a success, both in attendance and in the character of the work presented. The eminent gentlemen who were selected to prepare the addresses fulfilled their tasks admirably. We regret that our space does not permit us to publish these addresses in full, but we hope to be able from time to time to make such selections from them as will be of interest to our readers.

The financial statement of the Treasurer of the Association showed an increase in receipts of £3,105 over 1887, and an increased expenditure of £1,169. In view of the balance in hand for the year, amounting to £4,000, it was decided to send *The Journal* to the Colonies and India postage free.

Dr. Bridgwater, the President of the Council, in moving that the Report of the Council be adopted, eulogized the Editor and the General Manager for the able manner in which they had conducted *The Journal*, and replied to the critics in such a manner that the report was unanimously adopted.

Dr. Bridgwater also laid before the meeting a letter from Sir Joseph Lister on the conduct of *The Journal*, together with his reply thereto, and the resolution passed by the Council, as follows:

To the Council of the British Medical Association.

LONDON, AUGUST 1, 1889.

GENTLEMEN:—Many members of the Association have been much disappointed to find that the hopes which they had been led to entertain of an improvement in the conduct of *The Journal* have not been fulfilled. So strong is this feeling that a large number of men in influential positions in the profession, warmly attached to the Association, but jealous of its honor and despairing of seeing the improvement they desire, have expressed their determination to resign their membership.

But before carrying into effect a resolution so serious, it has been thought right to approach you, as the governing body, with the request that you will give this matter your earnest consideration, and take such steps as shall make *The Journal* in all respects worthy of the Association which it represents. We have the honor to be, gentlemen, your obedient servants,

(Signed)

JOSEPH LISTER, Chairman,
W. H. ALLCHIN, }
W. A. MEREDITH, } Secretaries.
JOHN WILLIAMS, }

Reply of President of Council.

DEAR SIR:—I beg to acknowledge the receipt of your letter dated August 1. I will lay it before the Council when they meet in Leeds next week. I must be permitted, meanwhile, to assure you that you may safely leave the honor of the Association where it has been safely preserved for so many years. Yours faithfully,

(Signed)

T. BRIDGWATER.

Resolved, "That the Council do not admit that the signatories of this letter are better judges than themselves, or more solicitous than they are for the honor of the Association and of the profession, but if there are any points which the signatories desire to particularize, in which they consider that *The Journal* admits of or calls for improvement, they will, as they ever have been, on receiving them through the Representatives of their Branches in the Council, be ready to give such suggestions their careful consideration."

Mr. Lawson Tait then moved the following resolution, which was carried with only one dissentient:

Resolved, That this meeting desires to express its satisfaction with the result of the present representative system of government of the British Medical Association, and their approval of the steps taken by the Council for the management of *The Journal*.

THE MENTAL HYGIENE OF PHYSICIANS.

In a presidential address delivered at the Medical Alumni Association of the University of Michigan, June 26, 1889, Dr. E. P. Hurd considered at length the subject of "The Mental Hygiene of Physicians." The address is able and eminently practical. At the expense of other matter we give space for its conclusions:

"If physicians would retain good mental health and intellectual vigor sufficient for the discharge of their varied duties in the best possible manner they should avoid:

"*First*. Overwork and the train of physical and mental symptoms which accompany it. To this end they should systematize their work, and as far as possible perform every duty at its proper hour. Office hours should be kept scrupulously; hours for meals, for sleep and for recreation should be as scrupulously observed. If a call comes which destroys the rest for a single night the lost sleep should be made up as fully as the circumstances of the case will permit. Much of a physician's time is frittered away by duties and occupations which are foreign to his true work. Guard your time sedulously from needless interruptions. Work done amid constant interruptions is always performed at an increased expenditure of nervous energy. The mind works best in accustomed grooves. When your attention is claimed by half a dozen different topics in as many moments the transition from one to another is always accompanied by a mental wrench which is detrimental to good work. Every physician should secure an annual vacation and relinquish toil altogether even if it is only for a single day.

"I am aware that plan we never so wisely overwork is sometimes inevitable, and an injurious strain upon the physical and mental forces is frequently unavoidable. The physician becomes sleepless, loses appetite, fails in strength, and shows other signs of exhaustion. Shall he at such a time spur on his jaded energies by stimulants or relieve his disagreeable sensations by narcotics? It were suicidal for him to do so. A stimulant or a narcotic may temporarily whip up the exhausted energies, but at the expense of more serious disaster later. The real remedies are rest and nutrition. Physicians should live well and avoid exhaustion by making a special study of foods and their effects upon themselves when suffering from exhaustion. A cup of cocoa, a glass of milk, a cup of bouillon, or coffee, will do as much as a stimulant, and more, because food is thus supplied in addition. The vexed question of tobacco has a bearing upon this point. If the narcotic it contains is promptly eliminated by the system and the indulgence leaves no unpleasant taste in the mouth, an occasional cigar or semi-occasional pipe may prove of benefit. For the sake of example let me suggest that smoking be done surreptitiously in the privacy of home or the sanctity of the inner office, far from the gaze of the curious, because in my judgment it cannot be denied that non-medical men who do not smoke

from such pure motives, but merely because they enjoy smoking and without any ulterior considerations of health are generally injuriously affected by the indulgence.

"*Second.* The social side of the physician's life should be cultivated. He should attend social gatherings, balls, picnics, lodges, churches, everything which will bring him into contact with his fellow men in a non-professional way. I know by experience how difficult it is for a physician to meet his fellows non-professionally. The hypochondriacal patient who desires an opportunity to talk over his symptoms gratuitously with a physician, the busybody who is so much gratified to have an opportunity to discuss the ailments of some one else and wring a prognosis, favorable or otherwise, from the family physician, the professional philanthropic who is sure to ask you what to do for half a dozen of his poor dependents—these and a hundred others conspire to rob the physician of any change of occupation even when he goes among his fellow men for social purposes. Do not hesitate to shake off these men. They are sponges not worthy of consideration and should not receive any. Dismiss them in the same category with the man who stops you in the street to inquire what is good for rheumatism or what he shall do for a cold. Many physicians finding their best efforts to meet the world socially, failures, by reason of unforeseen interruptions and untimely calls fall into the habit of accepting social deprivation as an inevitable lot. Do not yield thus, but make a diligent effort to break through the growing habit of indifference. Meet your friends and neighbors socially as often as you can.

"*Third.* Avoid the danger of looking wholly at the material side of vital phenomena. Human life is not solely the result of organization and cannot be explained satisfactorily from a consideration of its constitutional atoms. Vital growth, vital-action, the beginning of life, the onset of death, all imply something that is beyond mere material organization. From the standpoint of many physicians, as far as material organization is concerned there is little or no appreciable distinction between a Washington or a Lincoln or a Benedict Arnold. There were, however, hidden spiritual forces in the material organization of the former which rendered them a blessing to the world, and in the other a lack of it which has made the name odious. There is something in each man above, beyond, and higher than his physical organization. If vitality were but the result of organization medicine ought to be an exact science. No one knows better than we do how unlike the chemical crucible or the retort the body of man is, and how uncertain its reactions are. Life is God-given—a spark from Deity. Such views enable our profession and give us new zeal in the discharge of duty.

"*Fourth.* The life of the true physician is a practical religion. It is full of self-sacrifice and zeal for the welfare of others. It is a perpetual sacrifice of inclination to duty. The welfare of the patient is the first consideration, the comfort of the physician the last. Little needs to be added to the ethical side of the true physician's character. There should be added to this, however, a

belief in an over-ruling Providence personally interested in the affairs of men. This trust and confidence in the arrangement and disposition of human affairs by an all-wise Creator should be cultivated by every physician. Nothing is better calculated than such a belief to remove the unfortunate habit of worrying over the untoward results of disease. Death should not be looked upon as necessarily due to your neglect to do this or your failure to do that. 'Having done all' in his power to stay disease the physician should 'stand fast' in his own rectitude. He knows he has done the best he can under the circumstances—possibly not the best that could have been done absolutely, but the best he could do with the knowledge he had when he proffered his advice, or gave the medicine, or treated the patient. Nothing helps so much in bearing such cares or responsibilities as a genuine trust in a Higher Power and an Over-ruling Providence.

"*Fifth.* Allied to this, and growing out of it, is the necessity of cultivating a cheerful, hopeful spirit for the physicians own good. The absolute necessity of such cheerfulness and hopefulness on the part of every physician in the sick-room is obvious. If 'Christian Science,' so-called, has met with any success, it is because of its constant inculcation of hopefulness upon the invalid. 'You are not sick.' 'You are well.' 'You only have a mistaken idea of sickness,' etc. Such are its formulæ, which often are unmeaning enough, and yet which appeal powerfully to a most potent agency in the treatment of disease. I did not, however, design to speak of this aspect of the matter as much as of the duty of cheerfulness for the physician's own good and for the preservation of his own mental health.

"*Sixth.* Occupation, professional and otherwise. Every physician should have some subject for special study—Some hobby if you chose to call it so—all absorbing in its character, into which he can retire and forget for the time being the cares and annoyances of his daily life. This should be some branch of medical study in which he is an original investigator or a special student. I recognize the fact that we do not all possess the required talent to make deductions from observations carefully collated and recorded, but all have the ability to do the latter and to gather and arrange scientific or medical facts for master minds to interpret. The effect of such individual investigation upon the physician who makes them will be inestimable. When thus engaged he has a kingdom of his own into which he can enter without fear of intrusion—a city of refuge from the world without. The influence of such special investigations upon the profession at large in promoting knowledge and unifying effort would be incalculable. There are numerous branches of medical knowledge where careful, painstaking, personal observations such as any practitioner can make no matter where he may practice, are required to give better indications for treatment. I refer to certain anomalous forms of fever which are nowhere adequately described in any text-books; the action of remedies, new or old, upon different organs of the body; the relations of certain eruptive fevers and the laws of their development; the causation of pneumonias by atmos-

phic conditions; the phenomena of hypnotism, and the like. These are but samples of subjects concerning which every thoughtful physician can furnish original and valuable contributions to our stock of knowledge, provided he has formed the habit of observing accurately and recording carefully what he has seen. Beyond this, every physician should have a pursuit or study, wholly outside of medicine, to serve as a diversion and means of recreation. In choosing such pursuit, it should not be forgotten that the medical is one of the learned professions. Hence, the pursuit should be allied to medicine and calculated to increase one's zest for medical study or to throw side lights upon it. Botany, comparative anatomy, microscopy, photography, etching, drawing or sketching, meteorology, hygiene, natural history, modern languages, these are a few of the studies which many physicians are constantly pursuing. I have read with great interest, but recently, of the vigor and enthusiasm with which the lamented Douglass Houghton, the second professor appointed to a chair in this University—the first professor being the late Asa Gray, of Harvard—prosecuted the study of chemistry, botany, and geology, while pursuing the active practice of medicine in the city of Detroit. Such studies keep the mind active, and furnish diversion and needed recreation. They help to get our minds out of routine pursuits, and enlarge our ideas, and broaden our mental horizon. The intense man who is constantly applying himself to a single pursuit is much more likely to lose his mental health, than one whose energies have been diverted into several channels.

"*Seventh.* Avoid professional jealousies and heart-burnings. They come too often from the feeling that pecuniary returns are the proof of professional success, and from unworthy and ignoble views of the profession itself. Medicine should not be pursued as a trade—a simple means of livelihood, a stepping-stone to wealth, but as a learned profession, a true vocation, requiring the largest mental acumen, the keenest insight, the most rapid generalization, often from insufficient data, and the broadest mental grasp of any profession. The mission of the physician is not to make money, but to relieve suffering, to help Nature in her efforts after health, and to lay the foundation for the future Science of Medicine, which is surely coming. Every physician should comfort himself, amid doubts and discouragements, by the ancient motto, 'It belongs to all to deserve success, not to attain it.' All can deserve the character of a good physician, even if the emoluments of the profession are not theirs, and pecuniary success is uncertain. Professional jealousies and sharp competitions are unworthy the man who possesses this high ideal of his calling. The soured, disappointed, cynical, embittered physician has mistaken his calling.

"*Finally:* If we would retain good mental health, we must not lose faith in the future of our noble profession. The great advance in every department of medical science during the past twenty years, leads us to anticipate most encouraging developments in the near future. We are on the threshold of a new era. Nature is yielding her secrets to patient inquiry. Mystery is becoming certain knowl-

edge and assured truth. The future of medicine is inspiring. The thought of it richly solaces us for temporary disappointments and seeming failures. Let us be content to be humble laborers in the erection of the great edifice of scientific truth and accurate knowledge, which is rising before us."—*Physician and Surgeon*, July, 1889.

GASTRIC ULCER.

Dr. Longfellow, of Cincinnati, gives in the *Lancet-Clinic* a formula which he has used in gastric ulcer with very satisfactory results:

R	
Liq. potass. arsenit.	3j
Tinct. opii deod.	5ijss
Acid hydrocyanic, dil.	3jss
Aquæ destil. q. s. ad.	3iv

℞
Sig.—One teaspoonful every three hours, after taking milk.

Minute doses of cocaine have at times been indicated, and combined with the above, with the result of decided relief of pain. All starch and sugar foods are to be withheld.

Dr. Stepp, of Nuremberg, according to the *Lancet*, has employed chloroform internally with good effect. He prescribes it in the proportion of "15 grains in a 5-ounce bismuth mixture." He regards it as beneficial by reason of its disinfecting, astringent and stimulating properties.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting, February 20, 1889.

CHARLES E. HAGNER, M.D., PRESIDENT,
IN THE CHAIR.

DR. D. S. LAMB presented

TWO SPECIMENS OF CHRONIC OSTEITIS.

In one case the right tibia is much enlarged by sclerosis, with a central abscess cavity; medullary cavity almost entirely obliterated. Abundant exostoses. From a colored man, aged 60, who died of chronic diarrhoea. The post-mortem examination showed some fatty degeneration of mitral valve and some atheroma of aorta; heart weighed 13 ozs. Liver congested. Spleen atrophied. Colon deeply ulcerated throughout. A few small cysts of kidneys. Prostate enlarged. No history of injury.

The second specimen showed sclerotic thickening of lower part of femur, with large exostoses (osteophytes). Upper part of corresponding tibia porous. Some ulceration and exostoses in knee-joint; and patella firmly ankylosed to front of femur. From colored man, aged 70, who had inflammation of knee-joint when 15 years old. When 62 years old abscesses formed

around the joint and were opened. He had also chronic ulcers of tibia.

DR. C. W. RICHARDSON read a paper on

AN INTERESTING TOXIC MANIFESTATION
OF COCAINE.

The interesting case of cocaine toxæmia which I am about to narrate is for the purpose of calling the attention of many to a hitherto unheard of toxic manifestation of cocaine, and impress upon those who are already acquainted with this peculiar effect the possible danger which may arise from the incautious and somewhat careless manner with which this drug is frequently administered. Many of you are no doubt aware that cocaine is capable of unduly exciting the sexual passions; but few, probably, are aware of its capability, like ether, of exciting undoubted objective erotic manifestations.

During the month of October, 1888, it was my intention to operate upon a certain woman, in order to remove from the left nasal cavity a cartilaginous spur projecting from the septum, which was pressing upon the inferior turbinated body, giving rise to certain nervous phenomena and complete obstruction of that nasal cavity. The object of the operation was to restore the calibre of the passage and to prove the dependence of the nervous symptoms upon the existing deformity. She was a well-developed, well-nourished woman of 25; married; had had one child; large physique; handsome, modest and reserved. After explaining to her the nature of the operation and possible relief to be obtained she readily assented to its performance. On the day appointed she reported, being accompanied by a lady friend. Before operating my patient told me that she expected to be sick on the morrow, but did not wish to have the operation delayed unless necessary. In order to make the operation as painless as possible, experience having demonstrated the fact that cocaine applied locally has very little effect in rendering operations upon the septum painless, I concluded to administer hypodermically directly into the tissue to be removed a few minims of a 10 per cent. solution. Five minims of 10 per cent. is equivalent to one grain of the drug. After using the injection, for a moment, I gave no further heed to my patient, as I little anticipated the rather unpleasant results that followed my injection. My attention was suddenly attracted, and to my surprise, and the consternation of her companion, the patient began to manifest the most remarkable and decided evidence of erotic excitement. It is entirely unnecessary for me to give a résumé of her actions, facial and verbal expressions—her objective demonstrations were unmistakable. It required some time to bring her to even a moderate degree of quietness. As quickly as possible I removed her, with the assistance of her friend, from the

chair on which she was sitting to a sofa. While reclining she made incoherent remarks; called frequently for her husband; and kept her head in almost constant motion. Afterwards she walked the floor, wrung her hands and gave other evidences of great excitement. She states that she had no unpleasant sensations in connection with the circulatory or respiratory system; no faintness, heaviness; or wakefulness. She retired on going home, and when I saw her, at eight in the evening, she was in a normal condition. A few days afterwards I attempted again the removal of the spur, being on this occasion assisted by Dr. H. B. Deale. In this attempt I used my cocaine, not only in a local manner, but sparingly. Even on this occasion she manifested unmistakable, but decidedly mild evidence of an erotic excitement, not sufficient however to cause any interference with the operation, which was completed, and attended with a most happy result. The case which I have just narrated aroused several interesting and pregnant thoughts with regard to the danger which may possibly arise from the administration of this agent.

1. The danger of forming the cocaine habit.
2. The danger arising from the uncertain action of this drug. Cocaine, like chloral, at times, acts out of all proportion to the amount used.
3. As cocaine is comparatively a new drug there exists the danger of causing new, unexpected and unpleasant symptoms.

The first two of my observations are so well recognized that it is hardly necessary to give them more than a passing notice. All who have used cocaine to any extent can recall cases in which they regret having used the agent, and have also demonstrated that small doses have produced toxic symptoms out of all proportion to the amount of drug administered. We certainly should be more cautious in administering the agent, and always impress upon patients the danger attending its too frequent use. One-half grain usually produces its full physiological action; one grain may be considered a maximum dose. There exists a strong tendency among most men after they have used a certain agent for a long time without producing any serious or unusual effect to become careless and reckless in its application. The above fact remains true whether we know little or much about its physiological action and toxicology. I had until last summer, although thoroughly conversant with the then knowledge of the drug, doubted very much some of the asserted facts in connection with its toxicology simply because I had used the drug freely and frequently without any unpleasant effects. My first alarming case occurred in a female member of my own family, who was remarkably susceptible to the action of the drug.

The case we have just narrated presents to us

another interesting phase in the physiological action of the drug, *i. e.*, the excitation of the sexual desires. I am not a pioneer in this field of investigation, as equally interesting cases have been reported by Sandré, of Vienna, Cunningham, of England, and others. While both of the above-mentioned investigators called attention to these interesting symptoms, they did not take into consideration the possible medico-legal aspect. By medico-legal aspect I mean the possible danger that might result to a physician's reputation in case of the excitation of erotic symptoms in a female patient should they be alone. The question now arises as to the danger being a probable one. Is the danger as great as in its congener ether? Is there any danger of this character in the use of ether?

The last question I shall answer first. Ether, as we all know, in certain rare cases produces erotic symptoms of a most decided character, and many cases are recorded where there are evidences of the occurrence of complete venereal orgasm. Du Bois states that a woman under his observation requested, while being etherized, an attendant to kiss her, and after returning to consciousness stated that she had dreamt of having cohabitated with her husband. I refer to the celebrated case of *Com. vs. Beach*¹ to illustrate the danger to reputation and liberty that has been caused by the occurrence of this symptom in the patient. This danger is so well recognized in the use of ether that no one would think of administering this anæsthetic to a female patient without the presence of witnesses.

Is the danger from this aspect as great as in the use of ether? We would at once answer this question in the negative. There exists a vast difference in the action of the two agents. In the one consciousness is destroyed, while in the other it is retained. The erotic symptoms produced in etherization occur during the stage of excitement, before there is a complete loss of consciousness, but there is a sufficient obtunding of the sensibilities as to cause the patient not to connect the relationship between cause and effect. In the eroticism produced by cocaine the patient is conscious—conscious of her surroundings and all that is occurring, although she may not be able to repress the feeling arising within her. In one case, supposing no attendant present, the patient remembers the dream, the sensations, and has no means of convincing herself that the physician has not taken advantage of her unconscious condition. In the other the patient, while experiencing the same sensations, is positively aware that nothing of that character occurred.

Is the danger a probable one? If all women were honest and non-hysterical we would certainly answer this question in the negative, but

as such is not the case it is a danger to be thought of, though of an minimal nature. It is only necessary to suppose the occurrence of such symptoms in a hysterical woman, who, on her return home becomes mentally unstrung—remembering only her sensations—it would be almost impossible to convince her that liberties had not been taken; or the occurrence of the same symptoms in a designing woman, there is danger enough.

DR. J. FORD THOMPSON thought he had been very fortunate, as he had been giving cocaine to men, women and children since its introduction and had never seen any such result as that reported by Dr. Richardson. He used it almost every day on different parts of the anatomy, but had not seen such an effect. He would be more careful in future, especially when administering it to females. He had, however, seen unpleasant effects in other ways. He thought a 10 per cent. solution was too strong for hypodermatic use; 4 per cent. is better, and 2 per cent. hypodermically will generally suffice. He thought that it might be used more frequently in the extraction of teeth. The reason for its failure in dentistry, he thought, was because the gum around the tooth to be extracted is generally painted instead of injecting the solution into the gum.

He had frequently seen irritation and inflammation produced about the incisions in operations. The worst effect he had ever seen was in a case of circumcision, in which he injected into the prepuce a few minims of a 4 per cent. solution of the muriate of cocaine. The man fainted and vomited. After the operation he went home, and when Dr. T. saw him the following morning there was an extensive inflammation about the penis and scrotum, which he thought was erysipelas. On the third day there was gangrene on the under side of the penis and scrotum. It was worse than any case of phlegmonous erysipelas he had seen, and in spite of the extensive sloughing it got well without contraction. It might be claimed that this case was due to septic instruments, but as he always attends to the cleansing of his instruments he was sure that they were aseptic. At that time he was accustomed to carry a solution of cocaine in little vials, which he now thought had undergone decomposition. Since then he had carried the tablets of cocaine and a vial of distilled water, and mixes the solution at the time of operation—and never uses what is left. He also takes the precaution of heating the needles of his syringe to a white heat before using them. He might be accused of being too careful, but since he has adopted this method he had not had an accident: there had been no failure to produce immediate effect; there had been no inflammation; and union of the wound had not been interfered with.

DR. BERMAN was accustomed to use cocaine

¹ Med. Jurisprudence and Toxicology, Reese, p. 559.

every day and was glad to hear the report of Dr. R.'s case, as he had never seen any such excitement produced by the drug. This case might be classed with those idiosyncrasies in which the patient is particularly susceptible to the action of the drug. We see such unusual toxic effects from atropin and other drugs. The near approach of the menses may have had some effect in this case. He thought a 10 per cent. solution was too strong for hypodermic use in such a case. If it had been applied locally it would have answered the purpose. He had used a 20 per cent. solution in post-nasal surfaces without bad effects. He obtained good effects from a 5 per cent. solution if he waited a little while, or it might be necessary to repeat it. One lady to whom he had applied a 5 per cent. solution on cotton complained of nausea. A man objected to its use because it made him feel unpleasant a whole day, but experienced no erotic excitement. The gangrene in Dr. Thompson's case may not have been caused by germs, but by the contraction of the blood-vessels, which always follows the use of cocaine. He had had no experience with the hypodermic use of the drug, as he had always obtained the desired effect from its local application. He had painted the mucous membrane of the nasopharynx with a 5 per cent. solution and anesthetized the part.

DR. MURRAY was glad to hear Dr. Richardson's paper. It suggested the possibility of overdosing with cocaine, a possibility forcibly emphasized by the literature of the subject. Within a little more than two years after the introduction of cocaine as an anæsthetic Dr. Mattison, of Brooklyn, had collected and published the records of six fatal cases, and ninety in which poisoning to a greater or less extent had occurred. Cocaine seemed to be elective in its action, influencing different centers in individual cases. Dr. Schadle, of St. Paul, Minn., has reported two cases in which the sexual organs were affected; in one the patient's powers were stimulated and in the other impotence was induced. Mr. Mayo Robinson, of England, reports a case in which aphasia, lasting four hours, followed the application of cocaine for the removal of nasal polypus. The fatal case reported by Dr. Simms, of Philadelphia, showed the respiratory center to be most affected. He *thought cocaine dangerous* and agreed with Dr. Thompson that strong solutions should be avoided. He used cocaine as little as possible, had substituted electricity, using constant current, in cases in which he desired to relieve obstruction due to engorgement of the erectile tissue of turbinated bodies. It acted as quickly and nearly as efficiently as cocaine, and was valuable in such cases for its tonic action. Cocaine frequently applied he believed harmful to mucous membrane.

DR. THOMPSON would call attention to the use

of cocaine in tracheotomy. He had used it for this operation in two adults during the past two weeks. He introduced the solution hypodermatically along the line of the incision and there was no pain during the entire operation. This use will be still more important in children. During anæsthesia from ether and chloroform there is spasm of the glottis and the surgeon is compelled to hurry with the operation; but with the use of cocaine he can take his time. In neither of the two cases referred to was there hæmorrhage. Painting with cocaine is of little use in surgery. He had tried it in dilating the female urethra, but there was intense suffering. It may obtund the sensibility in mucous membranes but it is not always satisfactory in this use.

DR. RICHARDSON, in closing, said he did not consider 10 minims of a 10 per cent. solution too large a dose when we take into consideration that we were dealing with a patient in a normal condition. He had frequently operated upon the septum and always failed to produce complete anæsthesia by local application of the drug. He doubted the possibility of a 4, or even a 10 per cent. solution causing sufficient lowering of sensibility of this part to render operations painless; at least, such had not been his experience. It was only last Monday that he operated upon a young man of considerable courage, for a deflected septum. In order to render the operation painless he first painted the septum with a 5 per cent. solution of cocaine, and after a few moments tested it with a probe and found the mucous membrane quite sensitive. At the request of the patient, in whom he had used a 10 per cent. solution twice before, without unpleasant effect, he resorted to a solution of similar strength. Within a minute after painting the septum he noticed his patient become markedly pale, his hands were cold, pulse weak and rapid, and he complained of sickness and faintness—in other words, toxic effects. The patient was quickly restored. Even after the production of toxic symptoms the operation was excessively painful. This case also demonstrates the uncertainty of the action of the agent. We all know that the naso-pharynx is not as sensitive as other portions of the upper air-passages. Twice during the past month he had removed adenoid growths from this region—an operation occupying nearly half an hour—without the use of an anæsthetic. One of these was a boy of 15, the other a young lady of 22 years. Both suffered some pain, but, nevertheless, were capable of jesting during the operations.

DR. I. BERMAN read a paper on

THE POSSIBILITY OF LATENT SYPHILIS CAUSING INFECTION.

About sixteen months ago Mr. N. N. brought his wife to me for treatment for some throat trou-

ble, which had been existing for some time. One look at the lady's throat was sufficient to show me quite extensive ravages of syphilis. I at once took her husband into an adjoining room and put the question to him whether there was any possibility of her having been infected by him. This was denied. Under the circumstances, remembering that tuberculous lesions of these parts, in rare cases, can resemble very much those of her's, asked him whether any member of her family had died of consumption. This was confirmed by him very decidedly, so that I resolved, no special hurry being necessary, to leave the diagnosis for the present in suspense, until I had made a thorough examination of her chest and examined the sputum for bacilli. I gave her a disinfecting spray for the throat and nose, touched the ulcerations with lapis in substance, and waited for the developments which the microscope would afford us. Next day the sputum was brought, examined, and found to be free from bacilli. When they came again, which was after about three days, I took the gentleman aside and told him I had no doubt the disease was syphilis, and must be treated at once as such. He begged me to do exactly what I thought was proper, and I prescribed a 33 per cent. solution of iod. potass., of which 25 drops were to be taken three times a day, between meals, besides advising that the disinfecting spray should be continued and that she should come to see me every other day. I will here describe the nature of her lesions. Both tonsils were covered with ulcerations, another was on the pharyngeal wall, the arcus palatæ uvula was on the left partly destroyed, which the husband ascribed to the use of nitric acid, with which he had tried to cauterize it before coming to me. Rhinoscopic inspection showed extensive ulcerations in the post-nasal cavity, and the laryngoscope revealed a tumefaction over the right erythemoid cartilage, somewhat resembling a syphilacci. I found it necessary, in view of these lesions, to make a thorough general examination, which, however, furnished only negative results. There is no need of going into further details of the case, as I do not think that you will doubt the existence of syphilis. How the infection took place was a very interesting point to me, and I inquired of the husband, whom I had asked to call and see me alone, whether he had any lesion of doubtful character on his person. I was not satisfied with a negative answer, and asked permission to examine him. This was granted, and a thorough examination revealed nothing but a few infiltrated glands in the groin. The lady improved so rapidly that after a fortnight, apart from the destroyed portion of the soft palate, there could not be found a trace of anything resembling syphilitic lesions, and to this day, sixteen months since I first saw her, she has been not only absolutely free from all symptoms of

syphilis, but her general health has improved to such an extent that I failed to recognize her when I saw her a few months ago on the street, she having grown quite stout.

Some months after the lady had been discharged by me, at least for the present, as cured, her husband came to consult me in regard to his health. He complained about some symptoms of catarrh, but especially about a feeling of lassitude and general debility, which seemed to make all work, both physical and mental, a great effort to him. He imagined also that he had some kidney trouble. I told him that his case interested me very much, but that before I could do anything for him he would have to answer me some questions. These questions I put and his answers are contained in the following history: Is 45 years old; father died when 70 years of age of morbus Addisoni. Mother living, nearly 80 years old. No brothers or sisters. About 18 years ago he was treated for syphilis—according to his description an Hunterian chancre, sine exanthemata—with biniodide of mercury, for some time. The chancre disappeared very quickly and no sequelæ, that he is aware of, followed. I will here state that after I had told him my views of the case he was perfectly willing to give me all information in his power, and was very candid in his answers. He was married in the summer of 1872, believing himself perfectly well and being assured to that effect by his physician. There are no children to the marriage, and only one miscarriage occurred after two months. None later, and his wife did not complain of sore throat until eight years afterwards. At no time had he any sore throat or ulcerations in his mouth or throat, nor anywhere else, as a repeated thorough inspection demonstrated also to me. At least I could not find any cicatrices which are so characteristic of syphilitic lesions. Of course my diagnosis in his case was latent syphilis, and as he was very much run down I put him for the beginning on syr. ferri iod., 10 gtt. three times daily. Under this medication he improved rapidly, gaining 20 pounds in about six weeks, and said he felt much better than he had for years. Of course I informed him that his case would require prolonged supervision and treatment, and last fall I submitted him to mercurial treatment with hypodermics of bichloride, as he was complaining of dolores ostocopi, followed afterward by kal. iod. for six weeks. He has been getting on very well under this treatment, but has had now and then infiltration of submaxillary lymphatic glands, also of the præauricular glands. Repeated inspection of larynx and pharynx at that time gave always negative results, and the infiltration of the glands disappeared very soon under application of tinc. iod. and kal. iod. given internally. He feels perfectly well and strong now, and makes the impression of being in perfect health. Whether

he will remain so is a question that only time can answer, and I am still keeping him under supervision.

The natural conclusions which this case seems to allow us to form as decidedly as can be done under the circumstances, seems to me, that an infection of syphilis can take place through an individual afflicted with latent syphilis, probably through seminal fluid or other secretions.

THE PRESIDENT: Did she cohabit with any other than her husband?

DR. BERMANN could not answer this question definitely. The only interesting point in the paper is whether a woman could be infected by her husband eight years after marriage and eleven years after he had been treated for the primary lesion of syphilis, without any manifestations of syphilis during this period?

DR. THOMPSON thought that if the woman caught the disease from her husband it must have been when she became pregnant. The semen is not directly contagious; the child gets it from the semen and the woman from the foetus. The physiological fluid itself is not infectious.

DR. SMITH: Will a hypodermatic injection of the seminal fluid of a man suffering from syphilis produce the disease in an uninfected individual?

DR. THOMPSON thought not, but had never seen it tried. He did not think that the syphilitic bacillus was in either at this late date. He would also question the benefit of mercury at this time of the disease. If it were syphilis it was the tertiary form. Neumann divides his cases into three classes: in one he does not give any mercury; in the second he gives mild doses; and in the third he gives heroic doses. In the tertiary form of the disease hypodermatic injections of mercury would not be of much benefit. The children of parents with tertiary syphilis are not syphilitic, but have scrofula or struma. He did not believe in the presence of syphilitic bacilli in the tertiary form of the disease. There is no virus in the suppurative and later stages, and the fluids of the body are not inoculable.

DR. BUSEY: According to Dr. Bermann's statement the man has had syphilis for eleven years; three years after the primary chancre he had married, his wife became pregnant and aborted at the second month on account of syphilitic infection, and eight years afterwards syphilis became manifest. Is it possible for a man to have latent syphilis for eleven years before the development of secondary or tertiary manifestations? and a woman to become infected by her foetus and not exhibit symptoms of the disease for eight years? From the history he would suppose that the woman contracted syphilis long after that miscarriage.

DR. BERMANN: The man had been treated for syphilis two years before his marriage; his wife miscarried at the second month of her married

life; and eight years after she had syphilitic lesions of the soft palate. She did not contract the disease from anybody else; then the latent symptoms in the man produced the secondary symptoms in the wife.

DR. BUSEY: There were two remarkable coincidences which he was not quite willing to accept. It would seem that the only way for the woman to have become infected was through the pregnancy, and if that was so there would have been earlier manifestations of syphilis. He thought she contracted the disease subsequently. He doubted the duration of latent infection. He did not believe either the history of the man or of the woman. It must be demonstrated that a man could have a Hunterian chancre and then infect his wife eleven years after, before he could accept it.

DR. BERMANN: If the woman had had syphilis during this term of years more of the soft palate would have been destroyed. He was confident that she contracted it just before seeking his advice. Here we have a syphilitic husband constantly cohabiting with his wife, then why could not the latent disease take on fresh action and thereby cause infection in the wife?

(To be concluded.)

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Dr. Janeway on the Diagnosis and Treatment of Basedow's Disease—Dr. J. Lewis Smith on Idiopathic Contractions, or Tetany in Infancy and early Childhood.

The last meeting of the New York County Medical Association for the present season was an unusually attractive one; valuable papers by Professors E. G. Janeway and J. Lewis Smith constituting the main features of scientific interest. Dr. Janeway's was on "The Diagnosis and Treatment of Basedow's Disease," and in it he said his object was not to include the whole range of this affection, but rather to present some points derived from his personal observations in a considerable number of cases which might be of practical service. When well developed and presenting all the marked features characteristic of it, exophthalmic goitre could be at once recognized by any tyro; but the case was very different in the incipency of the disease, or when some of the characteristics were obscure. Thus, at the beginning the general state of the patient's health was not infrequently more apt to strike the physician than the distinctive features of Basedow's disease, and sometimes perhaps lead him to give a wrong name to the malady.

Of the three terms most commonly used to conceal the absence of definite knowledge regarding the disease present in more or less obscure cases: neurasthenia, malaria and lithæmia, the two former are occasionally applied to this disease. As regards the neurasthenia, the presence of nervous debility gave some ground for its use, while in other cases the patient not only grew weaker, but had a sense of heat, or even elevation of temperature; thus making the diagnosis of malaria plausible. The adoption of either of these terms, however, was of bad import for the patient; for the treatment appropriate to these conditions would not be successful in Basedow's disease. Dr. Janeway said he had known even a supposition of phthisis to exist, on account of the emaciation, loss of strength, and sense of warmth present, sometimes in connection with a cough due to an intercurrent cold or to congestion dependent upon enfeeblement of the heart. In such cases the goitre present might press on the larynx and trachea, causing congestion of these parts; while the enlarged heart was liable to cause some congestion of the lungs, and of itself produce some dulness. Moreover, from these causes a modification of the respiration occurred, and patients with advanced Basedow's disease had been thought to die of pulmonary tuberculosis when none was found at the post-mortem examination.

Each of the three factors of the disease, exophthalmus, goitre and palpitation, he went on to say, may be used as a designation of a disease, without having regard to the nature of the process. It is not uncommon for the exophthalmus to be overlooked by the patient and his friends, owing to its gradual supervention. Graefe's diagnostic rule, that the upper lid does not follow the eyeball, as in the normal state, in looking downwards, is not a certain criterion, for we may not find it in all cases where slight exophthalmus exists. Moreover, he had seen it present in one eye, and absent in the other. An experienced physician can often detect the exophthalmus where its presence has been hitherto unsuspected; and an excellent test is to ask old acquaintances who have not seen the patient for some time their conclusion in the matter. It is to be remembered, of course, however, that every case of exophthalmus is not dependent upon Basedow's disease.

The enlargement of the thyroid gland may deceive by its presence or mislead by its apparent absence. In the milder cases the slight growth or vascular engorgement of the thyroid (the patient in the meanwhile having grown thinner), may keep the neck of only normal fulness. Attention, however, to the condition of the circulation in the neck will serve to prevent misconception. Even when the thyroid is but little enlarged, the peculiar vascular turgescence, arterial thrill, and arterial and venous murmurs can be made out. When the thyroid is enlarged the thrill is

particularly noticeable in the superior thyroid arteries; while when this is not the case, he has felt it rather in the carotids themselves. Basedow's disease has sometimes been mistaken for aneurism, on account of the enlargement, thrill and accompanying murmur; and this is particularly apt to be the case when the enlargement is predominantly on one side. An occasional case will present the difficulty of deciding whether the disease present is an illustration of parenchymatous goitre accompanied by palpitation or is really Basedow's disease.

The condition of the heart, Dr. Janeway said, may be misleading in several ways:

First. Basedow's disease may complicate organic heart disease of præexistent date.

Second. At times it becomes difficult to determine whether a murmur of mitral insufficiency is due to an old lesion or is dependent upon muscular incompetence or relative insufficiency of the mitral valve. He has known hearts considerably enlarged as far as the left ventricle was concerned, and having well marked systolic murmurs audible posteriorly, yield under treatment to such a degree that the murmur disappeared and the heart returned to a nearly normal size. This constitutes one of the greatest liabilities in the way of diagnostic error in cases possessed of moderate goitre and exophthalmus, as the tendency is to consider the case one of incurable cardiac disease. In certain cases, to which he thinks sufficient attention has not been paid, the patient will suddenly fall or have his legs give way under him; but almost immediately will be able to resume the standing position or walk. The question of cerebral or spinal disease may be raised in connection with these; but the rapidity of the occurrence and of its disappearance disprove such a supposition. The cases in which he has met with it have been weakened by diarrhoea or vomiting, or as a result of the malnutrition accompanying the disease, and, under excitement or physical exertion, have had an extremely rapid heart action.

Third. As previously mentioned, the congestion of the lungs from the weakened heart may raise the question of phthisis.

Fourth. Cases are met with of palpitation without exophthalmus or goitre, but having, as far as the heart and the general condition are concerned, phenomena identical with those occurring in exophthalmic goitre. Such cases he has been accustomed to consider as allied to Basedow's disease.

As to the condition of the heart in this disease, his experience is that cases occur without any very marked enlargement, while others are met with in which, with an antecedent history of freedom from cardiac disease, hypertrophy with dilatation is produced by the Basedow's disease. Irritable vomiting is at times a distressing accompaniment of the disease, and may cause death.

The treatment, Dr. Janeway said, must have relation to the condition of the circulation, to the accompanying anæmia, and to any coexisting irregularity in the functions of the body, especially menstrual disorder. It must not be forgotten, however, that menstrual irregularity may be a result as well as a cause of the trouble. One of the most prominent features in the treatment consists in finding an agent which will quiet the rapidity of the heart's action, and his experience had led him to give up the use of digitalis for this purpose. Formerly he employed tincture of aconite to a considerable extent, and he has seen good results from it in cases where, but for the name of the disease, he would not have ventured to use it. As a rule, the best results have been from the continued use of small doses.

Of late, however, he has employed the tincture of strophanthus in doses of 5 minims three times a day, gradually increased if necessary. Of eight cases in which it was used, three have been lost sight of, while in two a cure has occurred; the only other remedy employed being iron. In one other, complicated with mitral insufficiency and considerable dilated hypertrophy of the left ventricle, there has been a cessation of the palpitation and a considerable improvement in the heart's condition. In the seventh case recovery occurred, but galvanism was also used. The eighth patient had such irritable vomiting that it was impossible to give the remedy, or even to administer much food, by the mouth, and she succumbed to the exhaustion of the disease and vomiting in a neighboring city, after she had passed from his immediate observation. On the whole, the results from strophanthus have been such as to convince him of its real utility in this disease. He has found it to succeed sometimes in cases where digitalis had failed, and he prefers it to aconite as less dangerous, particularly in cases where the heart is somewhat enfeebled. He tried spartein in two cases, but in neither of them did it prove of much service.

It is worthy of note that electricity, which has been highly lauded by some authorities, in this disease, has been of little value in his hands; and the same result was given by Dr. Alfred L. Carroll and others in the discussion of the paper. It was formerly Dr. Janeway's custom in all cases to advise galvanism, in conjunction with iron and some cardiac remedy; but he stated that he has not had a single case of cure where galvanism alone was used. The recent good results obtained by him from strophanthus and iron seem to render it probable that the benefit formerly noted when galvanism was resorted to was in reality due to the remedies used in conjunction with it. Personally, he has not used atropia, though he has seen cases in which it has been used, but without favorable result.

Rest, both physical and mental, is a necessary

adjuvant in the treatment, as well as the avoidance of worry and emotional excitement. He thought it reasonable to suppose that the condition of the circulation in this disease tends to produce the restlessness, often associated with insomnia, met with in some cases; and in a certain proportion of these it will yield to the ordinary treatment of the disease. Sometimes additional remedies are required, and in one case he has used sulfonal with good results. Formerly choice had to be made of the bromides, morphia (or, preferably, codeia), and chloral, or the use of the bath or wet pack. Iron is not invariably necessary, but is usually indicated by the coexisting anæmia. Attention should be paid to the condition of the nutrition, as evidenced by the appetite and general feeling and by the weight of the body; and whenever this is at fault appropriate measures adopted for its improvement. In conclusion he said that confidence on the part of the physician that he can produce an amelioration in his condition is of decided benefit to the patient. Moreover, it has seemed to him that hospital and dispensary patients are less amenable to treatment than those in the better walks of life; for where fright or worry is a prominent factor in the production of the disease, as is often the case, it certainly does not add to the efficiency of the treatment to have the patient surrounded by the sick and dying.

An interesting discussion of the paper was participated in by Drs. Carroll, Hepburn, MacGregor, Oberndorfer and J. Lewis Smith, and by the President, Dr. C. S. Wood; and in closing it Dr. Janeway said that certain points had been brought up by some of the speakers which he had not touched upon in the paper. Thus, he had not referred to the pathology, for the reason that this was so extremely obscure. In some of the cases in which autopsies were made the cervical sympathetic had been found entirely normal, and this would certainly disprove the hypothesis that the lesion of Basedow's disease is located in this portion of the nervous system. More recent investigations would seem to show that the trouble originated, either directly or indirectly, in the medulla oblongata. As to the starting-point of the disease from a clinical point of view, it would not do to always attribute this to such a cause as fright or emotional excitement. In one of the cases mentioned in the paper, where the patient was a lawyer of distinction, there was no fright, no special anxiety, and no mental strain from overwork. In this instance a complete recovery followed the use of strophanthus and iron. It was a well established fact, however, that a good many of the cases do originate from fright, worry or emotional excitement; and hence the disease was more common in women than in men, though he had met with a considerable number of cases in males.

He thought it advisable to avoid, if possible, the use of such agents as opium, as sooner or later the nutrition would become affected by the drug; and it was of the highest importance that the nutrition should be maintained as perfectly as possible. He had met with cases in which strophanthus and other appropriate remedies produced no effect as long as the nutrition was impaired; but when this had become improved the distinctive features of the disease began to subside under their use. In neuralgias also, and all chronic nervous diseases, he disliked to use opium for the same reason. There were, however, certain cases of Basedow's disease attended with rapidity of the heart's action in which nothing acted so efficiently in controlling this symptom as opium; and the same was true in some cases of aneurism in the region of the neck.

Dr. J. Lewis Smith's paper was devoted to the subject of "Idiopathic Contractions, or Tetany, in Infancy and Early Childhood." Having given a *résumé* of the literature of the disease from the time it was first taken up by the French writers in 1831, he stated that the term tetany is applied to an affection which is characterized by tonic contraction of muscles, commonly those of the extremities, but sometimes also those of the face or trunk, produced by causes external to the nervous system, and usually of temporary duration. In tonic muscular contractions arising from disease of the brain, spinal cord, or their meninges, or of the nerves supplying the affected members, the contractions are not the malady itself, as in the case of tetany, but are merely symptoms of a disease located elsewhere.

Tetany may occur at any age, but is most frequent in infancy, in early childhood, and in early adult life. As a rule, there appears to be no hereditary predisposition to the disease, but the occasional occurrence of multiple cases of the disease in families would seem to show that there may perhaps sometimes be an inherited neuropathic tendency. Nearly all writers assign the most important place in the causation to diseases of the digestive apparatus. Thus, Trousseau states that in the cases coming under his observation diarrhoea was commonly present (many cases met with in 1854 following cholera); but in one instance the cause seemed to be obstinate constipation. Dr. Smith then related in detail a case of his own, occurring in an infant, in which constipation was the only assignable cause; after which he went on to say that Erb states that all forms of intestinal disease may cause tetany, but that it especially occurs after protracted and exhausting diarrhoea. Gowers also regards diarrhoea as the chief cause. There is no recorded instance in which lumbrici or ascarides caused the contractions; but Gowers alludes to three cases caused by tapeworms. Remarkable as it may seem, dentition *per se* is but seldom a cause of tetany; but in

a case which Dr. Smith related, which he saw in consultation with Dr. Janeway, teething was regarded, after repeated and thorough examinations, as the chief cause of the trouble. The child was 20 months old, and the gums were found swollen and congested over the crowns of five advancing teeth, which appeared to be in nearly the same stage of development, and were evidently soon to protrude. The contractions continued for three weeks, by which time all, or nearly all, the imprisoned teeth had escaped; and after this there was never any return of the tetany. Speaking further of the etiology, he said that tetany is more liable to occur in those whose systems are enervated by preëxisting disease than in those who are robust. Billroth and Barthez, Erb, Gowers and others mention a number of febrile affections as a sequel of which it is liable to occur, and Gowers also states that in young children attacked by it indications of rachitis are rarely absent. Another recognized cause of tetany is exposure to cold, and hence it has been regarded by some as in reality a rheumatic affection. In infancy and early childhood, however, other causes are apparently much more common than taking cold.

Dr. Smith then gave the following clinical picture of the disease: Ordinarily tetany occurs without any marked premonitory symptoms, but in some instances it is preceded by pain in the head or spine, vomiting without any previous indigestion or gastric disturbance, and a general feeling of indisposition. Usually, in those old enough to express their sensations, it begins with tingling, burning, or other unusual sensory manifestations. The tonic contractions occur suddenly, and sometimes simultaneously in the upper and lower extremities. Rarely the contractions occur in the muscles of the upper extremities alone, or in the muscles of the trunk. At first a feeling of stiffness is experienced, and this is followed by the tonic contraction, with the fixation of the affected part in a state of persistent flexure or extension. As regards the upper extremities, the contraction of the thenar and hypothenar muscles usually causes hollowness of the palms of the hands; the first phalanges of the fingers are flexed, the second and third phalanges extended, and the thumb adducted and flexed. Usually the hand is slightly flexed, as is also the forearm. The muscles which move the arm commonly escape, but exceptionally there is adduction of the arm on the shoulder. The hand may be extended, instead of flexed, and all the points of the fingers extended; or they may all be flexed, and the first closed.

The thighs may be adducted or flexed, the foot extended, forming a talipes equinus, and the toes flexed. In cases of ordinary severity the contractions are limited to the muscles of the extremities, and are more marked and persistent in those which move the hands, feet, fingers and

toes than in other muscles; but in the severer cases the muscles of the trunk and head participate. Contraction of the abdominal muscles produces rigidity of the abdominal walls. Spasm of certain of the thoracic muscles occasionally occurs, causing dyspnœa, and even lividity; and in some of these cases of embarrassed respiration the diaphragm is probably involved. Opisthotonos, retention of urine, anteflexion of the neck from contraction of the sterno-mastoids, fixation of the jaws from spasm of the masseter, retraction of the angles of the mouth, stiffness of the tongue, and indistinct articulation, are occasional symptoms in severe cases.

The contractions render the affected muscles hard and unyielding, and the child cries from pain when attempts are made to straighten the limb. If the spasm be slight, some voluntary movement of the affected muscles is possible, though it is restrained and difficult; but in severe cases voluntary motion is impossible. Unless the attack is very mild, pain in the contracted muscles such as everyone experiences when a spasm occurs in the calf of the leg. It may occur in paroxysms, with distinct intermissions, or without interruption; and it may vary at different times, probably from some variation in the degree of spasm. Certain subjective symptoms, such as numbness and tingling, which sometimes occur in tetany, may continue during the intermissions. After some hours or days the rigidly contracted muscles relax and the disease disappears, except, perhaps, that a degree of stiffness remains. But the respite is usually of short duration. The spasms recur, and several successive recurrences and intermissions take place, running over weeks and months, before the disease is permanently cured. During the intervals in the contractions the affected nerves and muscles are in ordinary cases unduly excitable; so that sudden pressure or percussion causes some contraction. It was Trousseau who first noted that, as a rule, compression of the artery and nerve supplying the contracted muscles causes or increases the contraction. Dr. Smith said it was an interesting fact that in cases which he has observed the spasms did not cease in sleep, though perhaps the contraction of the muscles was not as great as when the patient was awake.

Gowers, Erb and others have noticed that the electrical excitability of the nerve which supplies the contracted muscles is increased; but occasionally in long-continued cases the muscles undergo a certain amount of atrophy, which is attended by diminished electrical irritability. When the contractions are strong œdema sometimes occurs, especially upon the dorsal surfaces of the hands, and Henoch attributes this to compression and consequent passive congestion of the veins. In some cases perspiration is sometimes noted, and an erythematous redness may appear over the affected muscles. Occasionally in acute attacks

the temperature is moderately increased, but ordinarily it is normal.

The pathology of tetany, Dr. Smith said, was still involved in great obscurity, though it was supposed that the motor cells of the spinal cord and the axis cylinders are in some way affected. As to its diagnosis, the bilateral and symmetrical nature of the affection was a point of great importance, and the fact that certain groups of muscles on the two sides were affected enabled us to distinguish it from the muscular contractions due to central lesions of the nervous system. Moreover, the spasms in tetany, as had been seen, were as a rule attended with intermissions, and the nerves over the affected area were increased in sensitiveness, while spasms could be produced by compressing the latter; thus forming a further contrast to the symptoms present in muscular contractions produced by disease located in the nervous centers or in the nerve supplying the affected muscles. With regard to prognosis, he said that tetany, whether intermittent, remittent, or occurring with little daily variation, sometimes soon ceases, and does not return; while in other instances it does not cease altogether for months, although varying in severity at different times.

In speaking of the treatment Dr. Smith said that the cause or causes of the attack, so far as ascertained, should obviously receive prompt attention. The bromide of potassium is a most useful remedy, and it should be given in decided doses; 4 grs. every three hours being required for a child of from 18 months to 2 years of age. Chloral, Indian hemp, and chloroform by inhalation, are also of service in allaying the spasms. Chloroform is said at first to increase the spasms, but they cease when the patient is fully under its influence; though liable to return when the inhalation is discontinued. Hauber states that two cases which were not relieved by other treatment were soon cured by active massage practiced when the patients were under chloroform narcosis. Stimulating liniments containing chloroform, applied over the affected muscles, have also been found of benefit in some instances. In his remarks on the electrical treatment of tetany Gowers states that faradism is contraindicated, but that good results have sometimes been obtained from the voltaic current. When rachitis is present, cod-liver oil, lime, and syrup of the iodide of iron are rationally indicated; and since so many cases originate from gastro-intestinal disorders, it is important that the diet should always be bland, easily digested and nutritious.

P. B. P.

ENGLISH authorities have concluded that dynamic cooling, if not the sole cause of rain, is at all events, the only cause of any importance, all other causes being either inoperative or relatively insignificant.

BOOK REVIEWS.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Vol. I, Session of 1888. Caldwell Printing Co., Birmingham, Ala.

This is a well appearing volume containing some thirty papers. Asepsis in surgical procedures is emphasized by several essays, entitled, "Antiseptic Surgery in Country Practice," by J. M. Taylor, M.D.; "Practical Aseptic Surgery," by J. W. Long, M.D.; and "Aphorisms in Antiseptic Surgery and Gynecology," by F. T. Meriwether, M.D.

We notice that S. M. Hogan, M.D., in "Treatment of Strictures of the Urethra by Electrolysis," according to the method of Dr. Robert Newman, of New York, meets with gratifying success, further that J. D. S. Davis, M.D., has treated enlarged prostate by electrolysis, following also the teachings of Newman, whose electrode he uses. This is introduced, after first being lubricated with glycerine, never with oils, into the prostatic urethra. It is then made the cathode or negative pole for a current of from 5 to 10 milliamperes. This current may be continued from ten to fifteen minutes. The anode should be applied to the back or hips. It should be understood that while physically there may be no difference between a current of 55 milliamperes continued for five minutes and a current of 5 milliamperes for fifty-five minutes, there is in fact a great physiological and therapeutic difference. In the former a chemical galvano-cauterization would result, while in the latter a galvano-chemical absorption, which the author defines as a chemical decomposition, which borrows its immediate effects from the separated non-nitrogenous bodies, there generating warmth, relaxation, softening and absorption of tissue. This is the character of current to be used in enlarged prostate. The other electrolytic action, known as chemical galvano-cauterization arises from the decomposition of salts which set free acids at the positive and bases at the negative pole, and said acids or bases attacking the tissues in their vicinity, giving rise to a caustic action chemical in its nature. The author quotes Apostoli, who expresses it very clearly in the following words: "The effect of electrolysis is, therefore, entirely analytical, and prepares for the subsequent caustic action, which is rather synthetical."

MISCELLANY.

LETTERS RECEIVED.

Dr. A. M. Hayden, Evansville, Ind.; Dr. Chas. W. Fry,

Bracken, Ind.; Dr. R. W. Ramsey, St. Thomas, Pa.; Dr. A. Blair Frazee, Eldridge, N. Y.; Dr. H. R. Storer, Newport, R. I.; Dr. C. L. Ford, Wequetonsing, Mich.; Dr. W. S. Hall, Haverford College P. O., Pa.; Frank Kiernan & Co., New York; Dr. David S. Booth, Sparta, Ill.; Dr. J. F. Kennedy, Des Moines, Ia.; Lea Bros. & Co., Philadelphia; Cincinnati Sanitarium, Cincinnati, O.; N. S. Niles, Boston; Geo. H. Hirsh, Ann Arbor, Mich.; Dr. G. W. Lowry, Hastings, Mich.; Dr. N. Senn, Milwaukee, Wis.; J. H. Bates, New York; Dr. Clayton Parkhill, Denver, Col.; Dr. W. E. Casselberry, Chicago; Dr. Jos. A. White, Richmond, Va.; Dr. Geo. Brown, Barre, Mass.; Dr. Laura Hulme, Worcester, Mass.; Dr. J. B. Vail, Lima, O.; Ward Bros., Jacksonville, Ill.; Dr. W. S. Swan, Harrisburg, Ill.; Dr. F. Tester Smith, Chattanooga, Tenn.; George Kiel, Philadelphia; Dr. Amos Sawyer, Hillsboro, Ill.; Dr. G. W. McCasky, Ft. Wayne, Ind.; Dr. George O. Mead, Newmarket, Eng.; Dr. Claude M. Ferro, Tracy, Minn.; Dr. R. J. Dunlison, Philadelphia; Dr. D. B. Wise, Mt. Eaton, O.; Dr. Walter Channing, Brookline, Mass.; Dr. J. M. Farrington, Binghamton, N. Y.; P. Blakiston & Co., Philadelphia; Dr. H. G. Chritzman, Welsh Run, Pa.; Dr. E. A. Cobleigh, Chattanooga, Tenn.; Dr. O. E. Abel, Winchester, Ind.; Dr. A. B. Judson, New York; Dr. Jno. G. Ames, Marblehead, Mass.; B. Glick, Kansas City, Mo.; Dr. J. M. Toner, Washington; W. H. Schieffelin & Co., New York; Drs. Allen & Ray, Philipsburg, Mont.; Dr. D. N. Skinner, Auburn, Me.; Dr. T. A. Renefeck, Newport, R. I.; The Racine Malleable & Wrought Iron Co., Racine, Wis.; W. W. Rokker, Springfield, Ill.; Dr. R. S. Sutton, Allegheny, Pa.; Dr. G. F. Cook, Oxford, O.; Dr. Daniel G. Lass, Rodney, Ia.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from August 21, 1889, to August 30, 1889.

By direction of the acting Secretary of War, Major William S. Tremaine, Surgeon, now on sick leave of absence at Buffalo, N. Y.; will report in person to the commanding General Dept. of the Missouri for assignment to temporary duty at the post of Ft. Leavenworth, Kan. Par. 4, S. O. 198, A. G. O., August 27, 1889.

Major Benjamin F. Pope, Surgeon U. S. Army, is granted leave of absence for one month, with permission to apply through Division Hdqrs. for an extension of two months. Par. 7, S. O. 54, Dept. of Texas, August 17, 1889.

PROMOTIONS.

Capt. Washington Matthews, Asst. Surgeon, to be Surgeon with rank of Major, July 10, 1889, vice Town, promoted.

Asst. Surgeon Charles B. Ewing, July 5, 1889; Asst. Surgeon Walter D. McCaw, August 20, 1889—to be Asst. Surgeons with rank of Captain, after five years' service, in accordance with act of June 23, 1874.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Two Weeks Ending August 24, 1889.

P. A. Surgeon J. H. White, granted leave of absence for thirty days, on account of wound. August 16, 1889. Surgeon W. H. Long, to proceed to Gallipolis, Ohio, as inspector. August 7, 1889.

Asst. Surgeon A. W. Condict, detached from revenue bark "Chase" and ordered to Louisville, Ky., for temporary duty. August 19, 1889.

Asst. Surgeon J. F. Groenevelt, ordered to South Atlantic Quarantine Station for temporary duty. August 8, 1889.

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ORIGINAL ARTICLES.

THE MASSACHUSETTS LUNACY LAW.

Read in the Section of Medical Jurisprudence, at the Fortieth Annual Meeting of the American Medical Association, June 1889.

BY T. W. FISHER, M.D.,
OF BOSTON, MASS.

The question of a revision of the lunacy laws of Massachusetts has excited much interest the past year, and may soon become the subject of legislative inquiry. Dr. Stephen Smith, ex-Lunacy Commissioner of New York, has published a "Report on the Commitment and Detention of the Insane," which recommends uniform legislation on these subjects.

Patients are now admitted at the Boston Lunatic Hospital in six different ways. The majority of them are regularly committed by the Judge of Probate on the certificate of two physicians. There is little to criticise in the law by which this is done, except the provision which forbids physicians connected with asylums from certifying. This is a reflection on their honesty not warranted by any experience in this country. The large number of private Asylums in England, kept by medical men for profit, rendered desirable a law that no physician should certify a patient into his own asylum. This law was transplanted to this country—where private asylums are rare—and changed so as to forbid any physician connected in any way as officer, or trustee, or commissioner, or member of a board of lunacy even, with any hospital for the insane, public or private, from certifying a private patient into any hospital for the insane. This is not only a gratuitous insult to the specialty, but a hardship to the friends of the insane. Superintendents of hospitals—especially in country districts—are the only physicians whose knowledge of insanity is of much value. Such an one's advice is naturally sought by the relative of the patient in obscure cases, and it is something of a shock to be told, after receiving his valuable opinion and advice, that his certificate is of no value. His opinion in court may settle questions of damages of large amount, or determine the disposition of large fortunes by will; the life or death of an insane criminal may

depend on his judgment; but having advised so simple a thing as hospital treatment for some private patient, two strange physicians must be called in, at added cost, to reexamine the person, before he can be sent to a hospital for treatment. Fortunately, the provision of law, that the judge may see the insane patient, is not mandatory. If it was, it would be impossible, or at least harmful, to many patients to carry it into effect in Suffolk county. Here 500 or 600 patients are committed annually by one judge, and he is necessarily obliged to give some formal reason for not seeing the patient. This provision is merely superfluous, as a judge could insist on seeing a patient without it.

The second form of admission is upon emergency papers. This method, though of general application, is in use only in Suffolk county, and at this hospital, no emergency cases being reported by the State hospitals. The emergency law was passed to allow excited and dangerous patients to be speedily admitted to hospitals for temporary detention, and to prevent the necessity of insane persons arrested by the police of Boston, on Sundays, holidays, and after business hours, when no judge can be found, being sent to the station-houses or city prison. This was an excellent object, and the law is absolutely necessary for the safety of the public and the good of the insane. Instead, however, of being simple and easy of application, more papers are required, more time is necessary, and the method is more complicated than that for a regular commitment. In an emergency, having an excited lunatic to dispose of, few physicians remember the law, or know where to look for it, and either make out faulty certificates, which cannot be received, or send the patient with his friends or by the police to the hospital without any papers. In a regular commitment, which many physicians have learned to understand, the two physicians sign the same certificate; while the emergency law requires them to sign separate ones, and also to add to the usual form the statement that the patient is sent as an emergency case, *i. e.*, that he is so insane that he cannot wait for the regular commitment process. We very seldom receive correct emergency certificates, except from the examining physicians to the Board of Directors.

This necessitates, when such a case arrives, the rejection of the faulty papers, and sending out into the city for two other physicians living nearest the hospital, who are strangers to the patient but able to certify properly. This puts the relatives to the expense of four physicians instead of two, and causes the prolonged detention of an excited patient in an out reception-room. Humanity requires that these cases should be received, but we cannot admit them to the wards without the proper certificates. Another absurdity of this law is the requiring of a bond of \$100.00 to be given by somebody representing the patient, to remove him within five days unless regularly committed. No superintendent would dare to keep the patient beyond the legal limit; as he would expose himself at once to a suit for illegal detention and heavy damages. In the great majority of cases, however, the bond is a mere form which might be dispensed with. It is either signed by some poor and irresponsible friend of the patient, or by some policeman, or, more often still, by one of the certifying physicians. Another absurd provision is that requiring that the mayor or one of the selectmen should sign the application. In Boston, where most of these cases occur, the law is evaded in the following manner (if it were literally enforced very few emergency cases would be received. It would be as easy to find the judge as to find the mayor or his representative): The Mayor of Boston delegates his authority both under the emergency law and the law for regular commitment, to the Board of Directors for Public Institutions. In the latter case the clerk of the Board signs for the Mayor an acknowledgement that he has been notified and puts it on file. In the former case he signs in advance blank applications for the admission of emergency cases, and gives them in charge to the Superintendent of this hospital and the examining physicians of the Board. Suppose the police or the relatives of an excited lunatic had to find this official at short notice, by night, or on a holiday, or on Sunday, as usually occurs, how often would the delay prove dangerous? These deviations from a strict interpretation of the laws relating to the commitment of the insane are at present humane and necessary, and I fully approve them. I think, however, that the red tape and complicated requirements of the emergency law stand in the way of its general usefulness, especially in the small cities and towns. Before the physicians of a country village could have found and read the law and made proper certificates, and invented a form of bond, and found a selectman who knew how to make an application, the lunatic might have murdered his family or burned the town. Practically, the law is not used in the country or outside of Boston. The violent lunatic is seized by the local police or town constable, handcuffed, and put

into the lock-up to await the slow action of the regular process of commitment before a judge of probate in some distant town, perhaps. The whole procedure in emergency cases should be simplified so as to consist merely in the sworn certificate of two physicians as to the dangerous condition of the lunatic.

The admission of voluntary patients is the third method to be considered. A recent law allows the Superintendent to receive as a "boarder" any person who makes written application to that effect "whose mental condition is not such as to render it legal to grant a certificate of insanity." This law, strictly construed, would prevent the admission of any insane person, or dipsomaniac, as a voluntary patient. This would only leave a certain class of nervous patients, who were apprehensive of becoming insane, and were desirous of early treatment as a means of prevention, to be admitted under this law. Applications of this kind are very rare at the public hospitals. The McLean Asylum, at Somerville, has almost a monopoly of this class of patients, and I am afraid many of the cases admitted there and elsewhere do not come within the terms of the law. A few inebriates have been admitted to the Boston Lunatic Hospital as voluntary patients, by order of the Board and otherwise, and some of them have remained a long time under treatment, and have apparently recovered.

Some patients, no doubt, are made willing to come voluntarily by the threat of commitment held over them by their relatives, and the knowledge that they can go on three days' notice by another written application for discharge. It is certain that some insane persons are admitted as voluntary patients; also, that many become insane and are committed before the three days' grace are over. It seems a breach of confidence on the part of the superintendent to have a voluntary patient committed, and yet it often becomes necessary. The opinion of Dr. Cowles, of the McLean Asylum, would be of especial value with reference to this law. It seems to me, however, that I should change it, so as to allow any person—sane or insane, or a dipsomaniac—admission on his voluntary application; but with the definite understanding that he was liable to be committed if his case proved serious or intractable. The term "boarder" is somewhat obscure. Does it mean a private patient, or simply an inmate, without regard to the payment of board? If the latter, may not a desire to be comfortably cared for at public expense induce some to apply? The law depends largely on the discretion of the superintendent for its successful application.

The fourth form of admission is under the Habitual Drunkard law.¹

¹ Since this paper was read a law has been passed providing a special hospital for inebriates.

This law, as it stands, is defective, and liable to abuse in several ways. In the first place, inebriates should be committed to some special institution, and not to lunatic hospitals. They not only take up the room needed by the insane, but, after the first few days, they are practically sane, and find themselves surrounded by the depressing influences of an insane hospital, and subjected to restraints and regulations primarily adapted to the insane. To be sure they are better off than when at large, exposed to temptations to drink, and much may be done for them in the way of kind treatment and moral management. But they are out of place, and they often feel it, and show it; while many are considerate and give little trouble, sometimes they interfere sadly with the discipline and interrupt the harmony of an asylum ward. They may refuse to associate with the insane or claim privileges which cannot be granted their insane neighbors and which, if granted them, cause more or less jealousy and hard feeling.

In the second place, they should be committed for a definite time, either for one, two or three years. This is necessary, because a long course of hygienic treatment is required to restore the enfeebled brain to its normal state of health and vigor, and to allow the weakened will to regain ascendancy over the appetite for stimulants. The inebriate's whole constitution needs reconstructing, and this process must not be interrupted by occasional drinking. It is better, also, for the inebriate to know definitely what he is to look forward to, so as to ensure contentment and repose of mind as far as possible. The patient should expend his energies in healthful employment, and in the attempt at recovery, and not in efforts for his own release. The present law subjects the superintendent to constant importunities for discharge on the part of the inebriate and his friends. Plausible reasons are advanced, ingenious schemes are made use of, and all sorts of influence brought to bear for a patient's discharge, when one would have supposed that removal from home for a year would have been a great relief to the inebriate's family and friends.

I have endeavored to conform to the rule here that no habitual drunkard shall be discharged under a year's detention, as that was the shortest period of commitment ever proposed in the discussions in Legislature and Parliament. I failed in applying this rule in almost the first case committed. After a two months' residence, this person was allowed to go home on trial, at the personal request of the judge who committed him, to avoid a long and unprofitable rehearing of the whole case on its merits. Fortunately, this patient has so far justified the confidence reposed in him, and has been discharged.

In the third place, the law should allow compulsory labor to be performed by inebriates, with-

in certain limits, and at the discretion of the superintendent, partly to reimburse the Commonwealth for their support, but more especially as a hygienic measure. Idleness in the wards of a lunatic hospital is as far as possible from the best treatment of inebriety. Varied employment, in the open air when possible, for a few hours daily, with similar periods for recreation out of doors, is the essential feature of such treatment. The majority of insane persons are unable to work, while most inebriates are. It would be wrong to compel an insane person to work, while inebriates might be induced to work, by promise of reward, deprivation of privileges, and other forms of moral suasion. The opportunities for work in most hospitals are already too limited, and lack in variety, while in an inebriate asylum there would be no objection to the use of tools of any kind.

The law is also liable to abuse in several ways. In the first place, physicians are not unlikely to apply the law to some inebriates who are not of unsound mind. The use of both terms, "dipsomaniac" and "habitual drunkard," tends to create confusion and ambiguity in certifying. Dipsomania, either inherited or acquired, would be a proper cause of commitment. Persons affected with an inherited tendency to that form of impulsive insanity, characterized by an insane desire to drink, are dipsomaniacs by inheritance. These cases are rare; they have a defective or degenerated cerebral organization which leads them to impulsive acts through a weakness of the will, and excessive energy of the animal instincts. In another more numerous class the brain has been so damaged by inebriety or other causes, such as ill health, blows on the head, sun-stroke, etc., as to prevent all possibility of self-control in relation to drink. These are cases of acquired dipsomania. Persons of sound mind who drink habitually from choice are not proper subjects for commitment. They are vicious drunkards, and should be punished rather than treated. These are nice distinctions it is true; but they are real ones, and it is therefore important that physicians should look carefully for the element of unsoundness of mind in the cases they are called on to examine.

There is also some danger that judges may not sufficiently regard the clause which requires that satisfactory evidence shall be furnished that the inebriate is not a person of bad repute or of bad character apart from his habits of inebriety. Such evidence is not likely to be presented unless demanded and the facts carefully elicited from reluctant witnesses. It would, indeed, be unfortunate if our insane hospitals should be used as convenient retreats for vicious and disreputable drunkards to recuperate in.

For many years there have been attempts on the part of superintendents of insane hospitals to secure the passage of a law allowing the commit-

ment of dipsomaniacs to some special institution for their custody and treatment. In England this movement resulted, after many years of discussion in Parliament, in the passage of an Habitual Drunkard's Bill, whereby such persons may voluntarily seclude themselves in special institutions for definite periods. The writer has often advocated before legislative committees and the Board of Health, Lunacy and Charity, and in a paper on "Insane Drunkards" read before the Massachusetts Medical Society in 1879, legalizing the commitment of inebriates to special institutions for long periods of from one to three years. He also demonstrated, in defending an action for damages for improper certification of an inebriate, at considerable trouble and expense, that, in the opinion of the Supreme Court of Massachusetts, there is such a disease as dipsomania, and that, in the absence of special institutions, such cases might be committed to hospitals for the insane. Soon after this decision, if not in consequence of it, renewed efforts were made by the Board of Health, Lunacy and Charity to secure the passage of a law on this subject, and in 1885 the following law, not wholly in accord with their recommendation, was passed:

An Act Concerning Hospital Treatment for Certain Persons Subject to Dipsomania or Habitual Drunkenness.

Be it enacted, etc., as follows:

SECTION 1. Whoever is given to or subject to dipsomania, or habitual drunkenness, whether in public or in private, may be committed to one of the State lunatic hospitals; *provided, however,* that no such person shall be so committed until satisfactory evidence is furnished to the judge before whom the proceedings for commitment are had that such person is not of bad repute or of bad character, apart from his habits of inebriety.

SECT. 2. The provisions of chapter eighty-seven of the Public Statute, and of acts amendatory to such chapter, relative to the commitment of an insane person to a lunatic hospital, shall be applicable to, and shall govern the commitment of, any person under this act except that in all proceedings relative to the commitment of any such person it shall be specifically alleged that he is subject to dipsomania, instead of alleging that he is insane.

SECT. 3. All the laws relative to persons committed to lunatic hospitals on the ground of insanity shall apply to persons committed thereto under the provisions of this act; *provided,* that no person so committed shall be discharged therefrom unless it appears probable that he will not continue to be subject to dipsomania or habitual drunkenness, or that his confinement therein is not longer necessary for the safety of the public or for his own welfare.

SECT. 4. This act shall take effect upon its passage.

Approved June 18, 1885.

It will be seen this act does not include this hospital in its provisions; but it has been construed as applying to it by the committing magistrate. The provision allowing commitment to lunatic hospitals may have been a compromise on the part of the legislature to avoid the expense of establishing a special institution for inebriates. It certainly was not what superintendents had

asked for, but what they had always earnestly protested against. They had hoped for a law to relieve them of such inebriates as did from time to time get committed to their hospitals on the claim that they were insane; and a law was passed legalizing the commitment to insane hospitals of habitual drunkards without any inquiry as to their sanity. This law was passed in the face of the fact that all the hospitals were full to overflowing with cases of ordinary insanity, so that hundreds were compelled to sleep in the attics and on corridor floors. Under this pressure one superintendent expressed himself as having degenerated into a big policeman, spending his time in trying to keep order and maintain discipline in a crowd of lunatics and inebriates, instead of devoting his time to his proper work of treating insanity.

The fifth method is by transfer from State hospitals for the insane. This has never been made use of in the history of the hospital until the past year. In fact, it was by Chapter 319 of the Acts of 1886 that it was first authorized. This provides that the order of commitment of an insane person, whose friends are unable to support him, holds good until his recovery, and he may be transferred, by the State or city authorities, to any "hospital, asylum, private dwelling, or other place," at their discretion, provided he has had a trial of hospital treatment, and has been insane twelve months. After this initiation, he may be subject for a lifetime, if he does not recover, to the control of the State, civic, or town authorities. He may be transferred from one asylum to another, regardless of the convenience or contiguity of his friends and relations. Boston patients, for instance may be, and are, sent to Northampton. He may be boarded out in some remote village, possibly to be overworked, underfed, and seldom visited by friends or inspectors. Ignorant and economical selectmen may without medical advice seclude him in some remote poor-house, or they may board him or farm him out on some distant farm. This control only ends with the life of the patient, and he may be still held by his first commitment paper years after the physicians who examined him and the judge who committed him are dead and forgotten. This is called "administrative commitment." If exercised by medical men, experienced in dealing with the insane, and humane men, remembering that the love of home and friends is not always extinguished in the insane at the end of twelve months, and that many recoveries occur after one year, and even after five years of insanity, it may not work much harm to the insane. If the selection of the boarded-out insane is very carefully made, and their inspection very thoroughly conducted by competent physicians, having experience in the treatment of insanity, not much harm may be done, and some money may be saved to the State.

I think, however, the law is rather in the interests of economy and administrative convenience than for the best good of the insane. An insane person's family and friends are the natural inspectors and supervisors of his treatment and condition. I see no reason why, because an insane person is poor and may never fully recover, he should be moved all over the State, like a pawn on a chessboard, because this or that hospital is too full, or because he can be boarded out at \$2 a week, while it costs \$4 at the State hospitals. Since writing the above I have read Dr. Park's last report, from which I extract the following: "Some forty chronic and incurable cases were transferred to the Tewksbury Almshouse and the Westboro' Hospital, and their places supplied by an equal number of similar cases from Danvers. Apart from the temporary pleasure of the day's outing, including the ride on the cars, which was afforded them by this trip, no improvement in their mental condition can be expected as a result of their change of residence."

The sixth method of admission is by the return of excited patients from the Retreat at Dorchester. We have received ten patients in this way—under a general order of the Board to take all patients sent to us by the superintendent of that institution. Nine of them were originally sent there under a similar order. The other case was that of a man who has lived in four different hospitals in the last two years on one commitment. I do not know whether the patients sent from this hospital to the Retreat were sent under the law of 1886 or not; if so, the original papers did not accompany them. There is a law which is open to criticism, but we have been exempted from its operation. It directs that all those insane committed from Suffolk County unable to pay board shall be sent in turn, and in equal numbers to each of the State hospitals and this hospital. At first commitments were made for six weeks to each of the above hospitals, including the Homœopathic Hospital, without regard to the question whether patients desired homœopathic treatment or not. This hospital was early exempted from the operation of this law by the Board of Lunacy and Charity as a single week's commitments would have overwhelmed us on the female side. For several months all patients have been sent to Westboro'. According to the terms of the law, and in practice, only homœopaths and paying patients are allowed to select their own hospital.

A NEW SWISS PHARMACOPŒIA.—A new Swiss Pharmacopœia is shortly to be published. A request has been sent, by the collaborators, to Swiss medical societies and practitioners, requesting suggestions as to the introduction of new remedies and the retention of old ones.

THE PATHOLOGY AND TREATMENT OF CHRONIC SCIATICA.

Read before the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, at Newport, June, 1889.

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Pathology.—Chronic sciatica may be the result of the acute form, or may be chronic from the beginning and run a tedious, painful and protracted course—at times almost abating, to be again renewed with increased paroxysms of pain. It has been truly said of sciatica that "it is an unwelcome guest who returns when least expected." The points of greatest sensitiveness are the buttock, sacro-sciatic notch, post trochanteric line, head of fibula, outside of leg, maleolus, sole, outside and two-thirds of the dorsum of the foot.

There are two factors in the pathology of chronic sciatica, viz: one a neuralgia or neurosis, the other a neuritis or perineuritis, inflammation of the sheath, and surroundings of the nerve trunk. The disease may be located in the peripheral or central portion of the nerve. Chronic sciatica may be the manifestations of a neurosis—functional derangement of a nerve centre found in neuropathic constitutions. There may be anæmia or hyperæmia of the nerve and sheath, or nerve centres, pressure of tumors, or a reflex irritation of the nerves from genito-urinary or rectal diseases as a urethral stricture, displaced uterus, or ovary, fissure, hæmorrhoids, pressure of the nerve by a contracting cicatrix, deposit of callus on the nerve or some of its branches, the rheumatic or gouty diathesis, spinal concussion, syphilis, malaria, pregnancy, over-lactation, alcoholism, venereal excesses, lead and mercurial poisoning, excessive fatigue, diseases of the vertebra, or pelvic bones, a damp or cold climate.

In the consideration of chronic sciatica, this question presents itself, viz: Is the pathological condition a neuralgia or a neuritis? In neuralgia of the sciatic nerve on ante- and post-mortem inspection, there have been no pathological lesions found in the nerve or its coverings; if the above causes were the only factors concerned in the pathology of chronic sciatica a removal of them *a priori* would cure the disease, but such is not the case; for though the cause may be removed the disease may still exist in all its obstinacy, and another factor must be considered, viz: a neuritis, or a peri-neuritis which makes chronic sciatica so rebellious to treatment. In chronic sciatic neuritis the pathological state is rather in the sheath of the nerve than in changes of the nerve fibres; the nerve fibres may undergo some pathological change in this condition, but what is at present known is, that the neurilemma or connective tissue sheath of the nerve, including its minute prolongations between and around separ

ate bundles of nerve fibrils, becomes much more hyperæmic than natural, and that on microscopic examination there is to be found in addition to the increased vascularity, a multiplication of new tissue elements and the presence of migratory leucocytes. These changes may cause considerable swelling of the nerve sheath and of its prolongations, and thus may produce irritation, or more or less compression of the nerve tubules, according to the amount of new tissue elements which accumulate in, or are produced within the sheath. In neuritis the nerve often appears to the eye normal, and the characteristic changes are only revealed by the microscope.

The microscopic changes in neuritis may extend to all the constituents of the nerve and present the ordinary picture of acute inflammation, hyperæmia, exudation, accumulation of white corpuscles in the tissue, and even the formation of pus. The nerve fibres, exhibiting in various degrees, the destruction of the white substance of Schwann and the axis cylinder, or, as in chronic neuritis, the alterations may consist in the more gradual proliferation of the peri- and endoneurium, which contracting renders the nerve dense and hard, and destroys the nerve fibres by compression. When the perineurium has been the principal seat of the inflammation in chronic neuritis, the trunk of the nerve becomes hard and thickened, from proliferation of the connective tissue. Sclerosis of the nerve.

In chronic neuritis as in the acute, the perineurium may be exclusively affected, the fibres remaining normal (Crushman and Eisinlohr). The nerve fibres themselves may be the primary and almost exclusive seat of neuritis, exhibiting more or less complete destruction of all their constituent parts, excepting the sheath of Schwann without hyperæmia, with little or no alteration of the interstitial tissues. Sometimes the fibres are affected at intervals, the degeneration occupying a segment between two of Ranvier's nodes, leaving the fibres above and below normal. (Neurite segmentaire periaxle). Gambault. "All of these lesions of the nerve fibres may be recovered from by a process of regeneration, the fibres showing a remarkable tendency to recover their normal structure and function. The nerve does not always present the appearance of a continuous inflammation, but the evidence of neuritis may be seen at points along its course which are separated by sound tissue. These points of predilection are usually exposed positions of the nerve or near joints."

"In chronic neuritis, the morbid anatomy consists of an increased vascularity of the affected nerve, sometimes of a varicose state of the blood-vessels, of a thickening and induration of the neurilemma in consequence of coagulate exudations. In variable degrees the nerve assumes somewhat of a slate color, loses its characteristic

opacity, and when examined under the microscope the nerve fibres are found to have fallen to a greater or less extent into a state of disintegration. The inflammation may attack the sheath of the nerve chiefly, and contract adhesions to neighboring tissues, the nerve itself remaining movable, although compressed. In other cases the nerve as well as the sheath is the seat of inflammation. In the growth of new connective tissue the proper nerve elements are compressed, and consequently atrophy and disappear, nothing remaining but a fibrous cord. On microscopic examination there is but little hyperæmia; the interstices are crowded with leucocytes and granular cells, but the most important change is the overgrowth of interstitial connective tissue, and the consequent fatty and atrophied degeneration of the nerve fibres with their axis cylinder; with injury to the nerve, occur secondary trophic changes."

Secondary trophic changes in chronic neuritis: The trophic changes dependent on chronic neuritis are frequently very prominent and important. Most commonly there is paresis, which may deepen into paralysis with atrophy of the muscles and degenerative reaction. The skin sometimes becomes rough and scaly, sometimes atrophied, smooth and shining (glossy skin). Edema of the subcutaneous cellular tissue is often seen. The hair of the affected part shows sometimes increased growth, sometimes it falls off. The nails may become thickened, rigid, and distorted. Deformity of joints with enlargement of the ends of the bones is not infrequently met with as the result of chronic neuritis. In short, we may meet with all of those trophic changes which have been described as arising from neural irritation, and which occurs in chronic neuritis as the result of compression of nerve fibres by the contraction of the proliferative connective tissue in the nerve trunk."

The diagnosis of chronic sciatic neuritis from chronic sciatic neuralgia cannot always be made, but the following conditions may be observed, viz.: That the neuralgia is generally dependent on some constitutional dyscrasia reflex irritation, compression of nerve by a contracting scar, a morbid growth, or a callus, and by removing the cause or disease on which the sciatica is dependent, the latter is ameliorated or cured; ante-mortem inspection of the nerve on exposure, may give no evidence of disease, and be considered neuralgic, though in obstinate cases it may be presumed there was a neuritis, or a perineuritis, or at least a hyperæmia of the nerve for the starting point. Heat, redness, swelling and pain are not absolute in neuritis as in other inflammatory affections.

There may be relative constancy of pain with the secondary trophic changes, spasm, atrophy, and paresis of the muscles, with atrophy and

coldness of the limb supplied by the nerve and conditions of causalgia, hyperæsthesia, paræsthesia, or anæsthesia with tenderness of the nerve along its tract together with the long standing of the disease; and in addition there may be organic nutritive changes affecting the skin, hair, nails, or the bones which would be diagnostic of neuritis or perineuritis.

The sciatic nerve being a mixed nerve, both sensory and motor. There will be two sets of symptoms in chronic sciatica. The sensory symptoms usually precede the motor, and are much more prominent for many weeks, months or years. The motor may be absent altogether. From the sensory there will be more or less continuous pain. At times paroxysmal, perceived at different points along the nerve trunk extending into its peripheral branches, and sensations of heat, cold, numbness and tingling sensations, hyperæsthesia, causalgia, or anæsthesia in the trunk or peripheral branches of the nerve. From the motor fibres there may be twitching and impaired functions of the muscles, amounting in many cases to spasms, or the motor fibres may be so involved as to cause paresis and atrophy of the muscles with impaired circulation, and nutrition with atrophy and coldness of the limb. Fortunately, for the victim of chronic sciatica many of the morbid states of both the motor and sensory fibres are absent. In most cases only a few having all the conditions enumerated.

Sciatica may extend centrally and involve the spinal cord. It is often quite painful or impossible for the patient to assume the sitting posture, owing to the extreme tenderness of the nerve trunk near the tuber ischii. Again it is impossible for the patient to lie in bed on the side of the affected nerve, or even on the back, owing to the great tenderness at the posterior inferior spine, of the ilium and fold of the buttock, unless the pressure of the bed is removed from the tender points by soft pads, or pillows placed under the knees and back, or the latter, and outside of the thigh.

There is an attitude and gait peculiar to the chronic sciatic patients, accurately described by M. Charcot in *THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, vol. xii, Feb. 16, 1889, No. 7. and he is the only writer, or authority known to the writer, who has given this description. In both of my patients who were nerve stretched the gait was quite characteristic. The first patient had chronic sciatica of the right sciatic nerve. The trunk was inclined to the left, the vertebral column described a curve with its convexity to the right, the left hand descended much lower than the right, the right lower extremity was semi-flexed, the buttock of this side presented a flattened appearance, the gluteal fold being elevated; finally the heel of the right foot did not touch the floor (Charcot attitude). The limb was atrophied and cold, one inch and one

half smaller from hip to foot than the left, and patient was unable to sit on the right buttock. The condition of the nerve on exposure before stretching was this: The neurilemma was found to be thickened, congested, and numerous reticulations of small blood-vessels ramified in the sheath; the latter, had lost its opacity, and was of a pinkish yellow color, had many nodular deposits, and had many adhesions to the adjacent tissues, showing plainly that the case was one of chronic sciatic perineuritis. Attitude of second case, left sciatic nerve affected, the trunk was inclined to the right, the vertebral column described a curve with the convexity to the left, when the pain was great or recurred in paroxysms, the left lower extremity partly flexed, except when walking on the street the buttock of this side presented a flattening, the gluteal fold being elevated, the heel of left foot did not touch the ground, or floor, without pain in the thigh. In the recumbent posture the left limb was flexed, pads or pillows had to be placed under the knee and back to remove pressure from the tender points, otherwise the patient could not lie on the back or left side; the limb was one and one-half inches smaller from hip to foot than the right one, and cold and atrophied, and patient was unable to sit on the left thigh and buttock. The pathological state of the nerve found on cutting down upon it and exposing it, were some fibro-cystic tumors and nodular deposits on the nerve (perineuritis nodosa chronica), and bands of lymph and adhesions. Between the sheath and adjacent tissue the neurilemma had lost its normal appearance and showed signs of fatty degeneration, and was traversed by many small blood-vessels. This was also a case of chronic perineuritis. Both of these patients had the hyperæsthesia of the skin in which touching, or brushing the affected parts causes a peculiar, disagreeable, nervous thrill, from which the patient shrinks, but which, however, is not a pain.

The treatment of chronic sciatica may be medical, mechanical, electric and surgical. It is presumed that tonics, restoratives, alteratives, and all other constitutional measures have been given a thorough and faithful trial, and that the condition, or disease on which the chronic sciatica was dependent has been removed or cured, and that such local measures as the employment of morphine, chloroform, sulphuric ether, osmic acid, atropin, cocaine, ice-water, antipyrin, and spraying locally with sulphuric ether, chloride of methyl, or rubbing the nerve tract with menthol or aconitia ointment, or ice, the free use of blisters, the hot or cold douche, massage, electricity, and actual cautery have been used, weighed in the balance, and found wanting, before the numerous surgical procedures are resorted to.

The local application of the actual cautery over the bed of the nerve, at three to five points,

at intervals of two to six inches, frequently ameliorates the condition of the patient, or cures the disease. The cautery iron, the paquelin cautery, or a glass rod heated to a white heat, over a spirit lamp, and applied in quick succession at points two to six inches apart, is preferred by the author. The latter does not blister, nor cause a running sore, but makes a dry burn of the integument, and is equally as effective as the other cauteries. Sulphuric ether or chloroform, at first seem to have a counter-irritant, than an anodyne effect when inserted into the bed of the nerve, and should be used in drops ten to thirty daily, or two or three times a week. The local use of morphine, atropin and cocaine, is much enhanced by combining one or more of these agents with one or the other of the drugs.

Graham speaks very highly of massage in the treatment of chronic sciatica, and gives a number of cases of several years duration—one case extending over nine years. Not only is it highly essential to the neuralgia or perineuritis, but it arrests and prevents secondary trophic changes; it increases the circulation, nutrition, and growth of the limb, and is anodyne besides.

Before cutting down and laying bare the nerve trunk to stretch, or even to perform Nussbaum's bloodless nerve stretching for the relief of pain, or any other purpose whatsoever, massage should be thoroughly tried, as the action of this method is somewhat similar to that of the other, releasing the nerve from neighboring tissues that compress it, and producing changes in its structure and circulation, and lessening its irritability, perhaps, by over-stretching. Massage and mild stretching might succeed when more violent stretching would fail. Langenbeck makes use of massage in the vicinity of the wound, after the violent stretching by surgical operations. In both of the writer's cases which were nerve stretched, massage had been given a faithful trial, and all other milder procedures, before resorting to nerve stretching. In the early and late stage of neuritis, massage is indicated; in the early it would act as a prophylactic, relieving congestion by causing a free circulation in the surrounding tissues, and by pushing the blood out of the distended vessels. In the late, by causing absorption of inflammatory products, the repeated mechanical effect of manipulation and percussion upon old neuralgia benumbs and lessens the sensibility of the neural filaments, and gradually decreases it, hence its use in chronic sciatica; not only may pain be relieved, but states of hyperæsthesia, paresthesia, causalgia and anæsthesia are relieved by massage, in addition to massage inunctions of vaseline, or olive oil are indicated in the secondary trophic changes of chronic sciatica. Massage should be used by gentle stroking, firm pressure, and slow, deep kneading. Acupuncture in chronic sciatica is a

valuable remedy, as well as in lumbago and other neuralgias, and rheumatic affections. Patient is laid upon the face, the tender points are found, and one or more needles inserted from half to one and a half inches, and allowed to remain from a half to two hours. The number of needles used is from one to six. In sciatica the needle should actually penetrate the nerve. This is known by the patient complaining of a sudden, sharp, shooting pain down the back of the thigh; this action may be due to the escape of nerve fluid, also to its counter-irritant effect. Cocaine may be used hypodermatically in connection with acupuncture.

Electricity.—The galvanic current has the precedence over the faradic, in relieving neuralgia, and also in chronic sciatic neuritis. It causes better nutritive and functional changes in the nerves and nerve centres, and causes restoration from many morbid conditions of the sensory fibres. The faradic is, perhaps, better indicated in the secondary trophic changes of chronic sciatica neuritis, affecting the motor fibres. Electricity has an anodyne effect and relieves the accompanying neurasthenia. It makes little difference whether the anode or cathode is used in the neighborhood of the nerve. The direction of the current is of no material importance.

Treatment.—In addition to acupuncture, the following surgical measures may be resorted to when other means have failed. Brown-Séquard has recommended exposure of the nerve and washing it in ether to effect the same end as nerve stretching. Nussbaum recommends bloodless nerve stretching in sciatica, which consists in having the patient etherized, whereupon the thigh is forcibly flexed on the pelvis, and then the leg extended on the thigh, and the foot on the leg—dorsal flexion—and held for a short time in this position. A considerable degree of stretching of the sciatic nerve is possible—in this way, a number of cures have been made—though less dangerous than stretching the exposed nerve, it is no trivial operation. The effects of nerve elongation are these, viz: Central elongation affects sensation, and peripheral mobility, direct and reflex excitability of the nerves disappear under the influence of strong traction, and is increased under limited traction. Sensibility is increased at first, and disappears more or less completely and more or less permanently according to the force employed and duration of the time of traction. Sensory fibres lose their excitability before the motor fibres. (Baum and Nussbaum). Mobility is less influenced than sensibility, and is reëstablished by slight elongation.

Modus operandi of elongation.—This is considered by some neurologists to act by diminishing the conductivity of the nerve, others by freeing it from adhesions, of pathological sources of compression. As regards function, nerve

stretching has but little influence on mobility, and when well performed is never followed by persistent paralysis; on the contrary, a permanent anæsthesia is indispensable to its therapeutic action. When it is directed, as is most frequently the case, against an exaggeration of the direct, or reflex sensory—motor irritability of the nerves.

Most nerve stretching has been done for neuralgia, especially sciatic neuralgia, giving more successes than on other nerves, and for other affections. Should the first operation of nerve stretching not succeed, a second one may be done after a reasonable length of time. Prof. H. B. Sands, of New York, has done nerve stretching the second time for chronic sciatica on the same patient, having performed the first about six months previous to the last. A degree of contraction may follow a rheumatic, or gouty deposit in the nerve sheath, and thus affect the nerve current in the centre of the fibre, which may be drawn out by the nerve stretching, the normal function of the nerve tubule being thus restored temporarily or permanently. The success may be owing to an alteration in the relations between the nerve fibres, having the effect of improving their nutrition. (Nussbaum). Nerve stretching is a less serious operation than nerve section, and more efficacious, and should be done in preference to the latter in chronic sciatica.

Indications for nerve elongation are, first, violent pain; second, continuous and annoying hyperæsthesia, paræsthesia, or causalgia; third, anæsthesia; fourth, paresis and atrophy of the muscles and limb to cause nutritive changes. Mild traction on the central end of the nerve, for sensation, and the distal end for mobility; fifth, the prevention of structural changes in the spinal cord; sixth, it may be used as a *dernier ressort*.

Nerve stretching is effected by cutting down upon the nerve trunk, detaching it from its connections for the space of a few inches, laying hold of it with the fingers, forcibly stretching the whole nerve from its origin to such an extent as to affect powerfully its functions, and then closing up the wound. In some instances a certain amount of loss of sensation or muscular power in parts to which the nerve is distributed is the immediate result, which, however, passes away after a certain interval, and the nerve function becomes more or less completely restored. When the sciatica is due to the pressure of tumors, or neuromata in the nerve tract or neighborhood, in addition to removing the tumors, the nerve may require to be stretched on account of its diseased condition, and the operation would not be complete unless the nerve was elongated.

From ten to thirty or forty pounds traction on the nerve is required; the amount of traction depending upon whether it is for the relief of pain, anæsthesia, hyperæsthesia, or to increase the mobility and nutrition of the limb. Rupture of

a moderately large nerve is not to be feared, since Baum has proven it is impossible to employ a force of more than 33 lbs. av. in making extension with a grooved director.

The pathological anatomy of nerve stretching consists in a laceration of the sheath, and in rupture of the blood-vessels which are distributed to its interior.

Schliech says a coagulation of myelin occurs; Tarchanoff says immediately after elongation traces of hyperæmia and capillary hæmorrhage and the division of a certain number of nerve fibres of the myelin and axis cylinder are found; the sheath of Schwann always remaining intact. Scheving found healthy fibres, especially at the centre of the nerve, and fibres in a state of fatty degeneration. In fine, nerve stretching seems to cause most frequently the rupture of a certain number of nerve fasciculi. Forcible elongation of large nerves does, sometimes, affect even the spinal cord. Sequelæ of nerve stretching are sensory or motor paresis, one or both, depending upon the amount of traction employed. If forcible traction on central end of nerve trunk has been exercised anæsthesia results; otherwise, hyperæsthesia. By slight traction on the distal end motor paresis or chronic sciatica may be relieved or cured. To control spasm of the muscles supplied by the sciatic nerve, forcible traction will produce paresis. Rigors within an hour after the operation of nerve stretching frequently occur. Should insomnia and neurasthenia not precede the operation they will attend it. Retention of urine for a few hours may supervene.

The treatment of patient after the operation is of great importance. It is desirable to get primary union of the wound in order to avoid the formation of a cicatricial tissue and compression of the nerve after the operation. For the first few days after the operation the limb should be kept extended at rest, and bandaged from the toes above the wound. After the seventh or fourteenth day passive motion and massage should be applied to the limb and affected muscle supplied by the nerve, to prevent adhesions and further degeneration and atrophy of the nerve, muscles and limb. The limb should be bandaged from three to six weeks to prevent œdema, to support the groups of muscles, and to prevent stretching of the scar, and to hold the limb in normal position until the nerve is regenerated, and the limb restored to its normal state. Sayres' artificial rubber muscles, a splint, or a removable plaster-of-Paris boot may be necessary to hold the limb in its normal position and prevent torsion and extension of the foot inwards, until the temporary motor paresis is cured. During the convalescence of most cases anodynes, soporifics and nerve tonics will be indicated. Exercise in the open air and sunlight on crutches, and in the wheel invalid chair, are highly essential, and should be employed with consistency.

In many cases it may be necessary to use local and general electricity, or both, to hasten the recovery of the motor paresis and the secondary trophic changes, and counteract and relieve the neurasthenia that generally accompanies the chronic sciatica before the operation, or which usually follows it.

The success of nerve stretching: In chronic sciatica, in 168 cases collected from various sources 153 have been cured, 15 cases temporarily benefited. In other neuralgias, out of 189 cases, 132 have been cured, and 33 permanently benefited. Bryant gives 70 operations of nerve stretching for sciatica; statistics indicate that in 60 the patients were either cured or greatly relieved, and that in the majority of cases the relief was permanent. The writer is informed that Mr. Calendar and other English surgeons have had about 60 per cent. of recoveries from nerve stretching.

As an extreme measure and a last resort, nerve section has been done for chronic sciatica and other neuralgias. Neurectomy has been done by Sapolino, Brinton, Morton, Hodge, Vance, Golding-Bird and Wyeth with at least temporary benefit. Cures have been reported of neuralgia that was cured by resection when nerve stretching had failed.

THE ORIGIN OF PUS.

Read in the Section of Dental and Oral Surgery at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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OF NEW YORK.

It is the gift of genius to foresee discoveries even for centuries. Such a genius was John Hunter, of London, who toward the end of the last century, merely upon the ground of speculation and ratiocination, made the assertion that inflammation is nothing more than a return of the tissues to embryonic condition. And our present knowledge of the process of inflammation and suppuration is a strong proof, supported by careful researches of good pathologists of Germany and England, that Hunter's theory was the correct one.

Since microscopy became a science (a period covered by half a century) the views concerning the intimate nature of the inflammatory process have been greatly at variance. These views largely depend upon the general ground taken by pathologists in reference to the pathological processes at large. We have three marked phases in the development of pathology within the last fifty years. The first is the standard of humoral pathology promulgated by the late Rokitsansky, of Vienna. The second is the phase of cellular pathology established mainly by Virchow, of Berlin. The third phase, still in vogue with many pathologists, is the doctrine of emigration of colorless

blood corpuscles or leucocytes, as propounded by the late Cohnheim, of Leipsic. I personally went through all these phases and am willing to admit that each meant progress, and still I have grown old enough to convince myself that neither of the views mentioned contained the whole truth. I have witnessed researches going far to prove that it is mainly a combination of the previous views that makes us approach the truth. I say approach, for there is no reason to deny that coming decades will bring us forward still more in our understanding of the intricate nature of the process termed inflammation and suppuration. During the past five years bacteriology has held sway of the minds of the majority of the pathologists, proving what was just stated. To-day no one will be rash enough to neglect the influence of bacteria in producing suppuration. And have we not learned through excellent observers that it is not the microorganisms themselves, but rather their chemical products, the ptomaines, that play an important rôle in the causation of suppuration and possibly of inflammation. I here allude to the latest researches of Seber, of Goettingen, who maintains that it is a ptomaine, called by him *phlogestein*, that stands in causal relation to inflammation.

The task I have undertaken is to bring before you a review of the theories held in the last fifty years, closing my historical remarks with a description of what I consider to be the truth to-day. The review of such a history is instructive in many respects. It teaches us that none, be he of the most gifted talent, is able to emancipate himself from preconceived ideas and accepted notions. It furthermore teaches us that we are the subjects of general theories extant for the time in which we make our investigations. It teaches the great lesson of modesty and humility. If a man of my age must confess in the seventh decade of his career that he has been misled in his younger days by books and teachers and must try hard to unlearn what he thought he knew before, it is certainly proof of human frailty, and goes far to prove that we are obliged to consider the truth to be truth only *pro tempore*, viz.: so long as we do not know better. Our successors will surely step over our shoulders and will estimate our work only by considering the amount of time, honesty and acuteness of mind spent in bringing forth new facts and new revelations.

In the fifth decade of our century humoral pathology was thought to hold the full truth in the explanation of inflammation. The older of us will remember which facts the humoral pathology was based upon. The web of the foot of a living frog was expanded over a cork ring and the web touched with an irritating agent, such as a drop-let of ammonia, an acid, or with a pointed, red-hot iron, and the subsequent changes observed under the microscope with the comparatively low powers

at the disposal of investigators of the time. They saw around the irritated portion of the web an undulation of the currents of the blood within the vessels, shortly afterwards a slacking of the current, and still later a standstill of the stream. The last phenomena they called "stasis," and this stasis was thought to be the essential feature of the inflammatory process. Many and animated controversies arose over the question, what is the stasis due to? Most observers agreed that a paralysis of the capillary blood-vessels, after a few preceding contractions, was to be considered the cause of stagnation. At the same time an inundation was seen to take place in the affected tissues with a liquid which of necessity must have come from the general blood column, and was termed "exudate." According to the nature of the exudate different varieties of inflammation were set up, such as the "serous," the "fibrinous," the "albuminous," and should blood have been admixed with the exudate, the "hæmorrhagic." Corpuscular elements seen in the affected territories and apparently suspended in the *exudate* were thought to have originated from the exudate itself, therefore the pus corpuscles would have originated from the exudate, the latter from the blood, hence the definition of pus, "dead blood." No stress was laid upon the structural changes of the affected tissue itself, except so far as the exudate saturating this tissue was concerned. The ultimate cause of inflammation and suppuration was sought in chemical mixtures of the blood, termed dyscrasia, which means bad mixture of the blood. If a person became affected with lobar pneumonia the cause surely was surplus of fibrin in the blood, or fibrinous dyscrasia. If a person produced a number of abscesses in his organism the cause was denominated purulent dyscrasia. All diseases were, in this dyscrasic view, essentially diseases of the blood. The blood in its mixture caused the diseases simply by being overloaded with obnoxious or effete material.

The man who dug the grave of humoral pathology was Virchow, in the beginning of the sixth decade of the present century. To him the phenomena of alterations in the circulation of the blood were of secondary importance. The stasis he would not admit as a cardinal symptom of inflammation for it would mean rather death of the tissue, gangrene or necrosis. The exudate also played but a secondary rôle, serving only as a pabulum to the living corpuscular elements of the tissues, the so-called *cells*. Inflammation was, in Virchow's opinion, a structural change of the affected tissue, mainly morphological changes of the cells themselves. The cells being the seats of life would attract and, as it were, imbibe the exudate, swell up, divide and come to a state of proliferation, in which a number of cells would arise from an original single cell, and the large number of newly-formed cells would replace the intercellular

substance lost by liquefaction. A formation of cells out of a previous liquid or semi-solid exudate was declared to be impossible, since all newly-formed cells must have arisen from preëxisting cells. Dyscrasias were done away with. The main causes of inflammation were peculiarities of the tissue itself, and a certain weakness of the tissue was proposed to explain the predisposition to inflammatory processes. The word suggested for this supposed local weakness of the tissue was "diathesis." If a man suffered from articular rheumatism the cause was said to be "rheumatic diathesis." Tuberculous persons were predisposed to cheesy degeneration simply because they were afflicted with *tuberculous* diathesis. In the same sense hæmorrhagic purulent diatheses were spoken of. The pus corpuscles were without exception an offspring of the previous cells of the tissue, and in this sense pus was considered dead tissue. Cellular pathology has made a very strong impression on the minds of observers. Even the stalwart humoral pathologist Rokitsansky yielded to the novel views and accepted the doctrine that no cell will grow in an exudate unless previous cells be there. Cellular pathology even in our day governs the minds of most pathologists over the civilized world. Proliferation of the cells accounts for all tissue changes, either newly-formative, the so-called hyperplasia, or destructive, that is, suppuration. Proliferated cells being present in either of these instances, cellular pathology is at a loss to explain why a certain tissue, owing to proliferation of its cells, becomes augmented and hyperplastic in one instance and is destroyed by suppuration in the other. Still, in spite of all weaknesses of this doctrine, we must consider it an advance in comparison with the teachings of humoral pathology. The cell being supposed to be the only center of life, inflammation and suppuration were for the first time considered as the phenomena of life, and the idea began to dawn in the minds of pathologists that inflammation and suppuration were morbid processes occurring in tissue elements endowed with life, the so-called cells.

The third period arose in the middle of the seventh decade of our century, when Cohnheim observed a migration of colorless blood-corpuscles through the walls of the capillaries and small veins of an exposed and expanded mesentery of a frog. Several years before S. Stricker, in Vienna, observed the red corpuscles pass through the walls of the capillaries of the nictant membranes of the live frog, so-called diapedesis. Even in 1848 the emigration of leucocytes had been seen in England by Walker and Wallace. The facility with which the emigration of leucocytes could be seen under the microscope has induced many German pathologists to accept the view of Cohnheim, that inflammation and suppuration are but an emigration of colorless blood-corpuscles.

These accumulating in a tissue whose cells would remain inert and whose intercellular substance would become liquefied and destroyed, furnish a representation of both inflammation and suppuration. With this view there was nothing alive in the body but the leucocytes. At first Cohnheim denied the participation of the so-called stable cells in the process of inflammation, but later he admitted that in reparative inflammation the tissue cells do proliferate and furnish their share for the benefit of newly-forming tissue, exactly in the sense of cellular pathology. That pus corpuscles should be emigrated colorless blood-corpuscles was intelligible, as were isolated corpuscles nearly identical in appearance. How new tissue could form from leucocytes remained a deeply-shrouded mystery, as no observation has as yet proved that through coalescence of leucocytes new protoplasmic masses and new tissues can arise. The observation of Zeigler, of Tübingen, that multinuclear bodies, so-called giant cells, are invisible between thin glass plates introduced under the skin of an animal lacks the proof that such giant-cells arose by coalescence of leucocytes. On the contrary, later observations made especially upon deciduous, replanted and implanted teeth, go far in proving the giant-cells to be an offspring of the myxomatous granulation tissue, sprouting in all directions, filling the bay-like excavations on the deciduous and other teeth and carrying blood-vessels into places where there had been none before, leading to the vascularization of a new tissue, seen, for instance, in sponge grafting.

S. Stricker immediately sought to overthrow the teachings of Cohnheim. In his investigations he used almost exclusively the cornea (chiefly of frogs, cats and rabbits); in which he brought inflammation by introducing a thread. The changes were faithfully watched up to the formation of abscess around the foreign body. The observations enabled him to prove the established views of cellular pathology to be correct, namely, that these so-called cells divide and subdivide, but also that the coarser offshoots of the cornea corpuscles split up, and by division produce new corpuscular elements. Stricker also held, up to 1874, (Ashurst's International Surgical Cyclopædia), that pus corpuscles were products of proliferation of the cornea corpuscles and their coarser offshoots. Unfortunately he calls all the products of cells originating from proliferation of previous cells pus corpuscles. Indeed it was impossible to discriminate between inflammatory corpuscles and pus corpuscles, since all of these appeared isolated under the microscope. Clinically it is well established that every inflammation does not terminate in suppuration. Particularly do we know of a termination which instead of causing destruction of an affected tissue, as suppuration does, brings about a new formation, an increase

of the bulk of the tissue, the so-called hyperplasia. How shall we explain such marked differences by the theory of cellular pathology, which claims all corpuscular elements are isolated from the start? However, since 1880 Stricker is a convert to the views of C. Heitzmann, established in 1873, which doctrine I advocate, having studied specimens, illustrative of inflammation and suppuration, under the microscope in that investigator's laboratory.

Let us recapitulate in a concise way the views held by the said C. Heitzmann concerning the normal or physiological structure of tissue. He holds that there is no isolated or individual cell in any variety of tissue in either the animal or vegetable organism. Such individual corpuscles are met with only in the fluids of the body, such as the blood, where they are named red corpuscles; in the lymph, called lymph corpuscles; in the saliva, called salivary corpuscles; in the sperm, called spermatazoids, etc. Neither the blood nor the lymph, nor any of the fluid, semi-solid secretions deserve the name of a tissue. Tissue we call a continuity of not only organized material, but a material endowed with all the properties of life, such as mobility and the capacity of reproduction. Tissues hold at certain intervals protoplasmic bodies, so-called cells, the vast majority of which are in continuity with the living matter held by those substances, previously termed "intercellular" and to-day they are known by the names of basis and cement substance. The greatest amount of living matter is present in the centers of protoplasmic bodies, where they appear as nuclei and nucleoli. The surrounding protoplasm, in full development, holds the living matter in a reticular arrangement and such a reticulum is traceable throughout the surrounding basis substance, hitherto considered as entirely inert. Thus an uninterrupted connection is established from one "cell" to another by the intervening bridges of living matter. This same arrangement being present throughout all tissues of the animal organism, a continuity of all the tissues composing such organism is established. Recent researches of botanists go far to prove that even in the plants there exist no individual cells, but the intervening cement substance, or cellulose, is traversed by minute bridges of living matter, rendering the plant an individual from the tips of the leaves to sporacles of the rootlets. Recent observers in animal and vegetable microscopy have drawn attention to the fact that by means of certain reagents the nucleus will be split up into loop-like threads, a process which they consider precedes the division of the nucleus and indirect division of the protoplasm. This process is termed karyokinesis, or mitosis—"fibrillation," "thread making." This observation is had only with certain reagents and is not visible in the fresh specimen or in one preserved in a chromic

acid solution. Suspicion naturally arises that the loop-like figures of the nucleus are artificially produced and thereby their connections are rendered invisible. The threads forming loops are called "chromatin," because readily stained by aniline dyes, whereas the intervening substance and the protoplasm itself stain but little, and therefore are "acromatin." Facts rendered conspicuous by staining appliances only are of doubtful correctness. The fact that there are threads and loops in the star-point form arrangement in the nucleus rather proves the latter to be made up largely of living matter, which is known to change shape any moment. Coarse formations of living matter readily stain with aniline dyes, whereas delicate formations of the same substance will not stain. The connections between the loops of the nucleus and the surrounding radiating reticulum of the protoplasm are plainly visible in fresh specimens, and also those preserved in liquids which we know will not alter the structure of protoplasm, such as a solution of chromic acid of one-tenth to one-half of 1 per cent. Alcohol as a preserving fluid is far inferior, owing to the shrinkage it effects.

Let us analyze the construction of dentine (most important to dentists, since it builds up the main mass of the tooth) in the light of this novel doctrine, for which the late Louis Elsberg, one of its most enthusiastic advocates, suggested the term bioplasson theory. Dentine has no cells, but is composed of a dense, firm basis substance (not cartilaginous as formerly thought but glue yielding, similar to that of bone tissue) thoroughly infiltrated with lime salts. This basis substance is traversed by the canaliculi which radiate from the surface, occluding the pulp chamber toward and join the cement and enamel. Each canaliculus holds in it a delicate fibril, the so-called Tomes fibre, around which exists a minute space filled with a liquid, obviously the carrier of nutrient and denutrient substance. Fine thorn-like offshoots were known, especially in transverse sections of dentine, to emanate from the fibril, traverse the surrounding space and fade upon approaching the wall of the canaliculus. Now in the light of the bioplasson doctrine the Tomes fibres are formations of living matter. From them arise transverse conical offshoots penetrating the walls of the canaliculi and in connection with a delicate, nearly rectangular reticulum traverse the whole of the basis substance and connect the tenant of one canaliculus with the neighboring tenants directly, and therefore all the others indirectly. The presence of this reticulum was first established by C. F. W. Bödecker, in 1878, who saw light rents in the basis substance and assumed them to hold living matter without being able to directly prove its presence.

This proof has been quite recently furnished by Wm. Carr, who after decalcification of the dentine

by means of a 6 per cent. solution of acetic acid rendered the reticulum visible by staining with a chloride of gold solution, and also osmic acid. These last results have not as yet been published by their observer. I have seen his own specimens through lenses of 1,000 to 1,200 diameters with good immersion, and am convinced of the presence of the reticulum throughout the dentine.

Thus we understand how dentine can grow and be nourished, and realize it is a tissue endowed with sensibility prominently at those places which abound with living matter, such as the periphery toward the enamel and the cementum at the neck of the tooth. Therefore we can appreciate that living dentine, if irritated by a foreign body, such as a mass of gold filling, or chemically by acids, will react upon this injury, become inflamed and produce a new tissue, called osteo-dentine, which sometimes is more compact than the original. This process of the inflammation of the dentine, called "eburitis," was carefully studied by Dr. Bödecker a few years ago, and although he has not yet completed his studies upon teeth which had been filled with different materials for months and years, every intelligent dentist knows that such a reaction exists. This fact is utilized by all of us in introducing highly-irritant agents, such as oxyphosphate of zinc, into otherwise poorly calcified, so-called soft, teeth. The result after some months is a compact wall of the cavity made up of osteo-dentine, or secondary dentine, and better fitted to tolerate a gold filling than it was before this temporary filling. How can we understand these changes and the toleration of highly conductive filling, unless the tooth substance be a veritable living tissue throughout its extent? Whenever irritation is brought to bear upon a living tissue reaction will follow, and this is inflammatory process. The first that occurs is liquefaction of the basis—or cement—substance, probably induced by the presence of an acid, mainly lactic, thus the living matter previously concealed (held) in the basis—or cement—substance becomes liberated and the protoplasmic form of the basis substance reappears. This condition has directly been observed by S. Stricker on the cornea of frogs, as before stated. He saw the basis substance in motion, changing the configuration of its living matter, under the microscope, much like clouds changing on the face of the sky. Next the protoplasm furnishing the substratum of previous basis substance becomes split up into small bodies, known as medullary, or embryonal, or inflammatory corpuscles. Any portion of living matter of such indifferent bodies may grow to the size of a nucleus, owing to the presence of an excess of pabulum beyond the physiological requirements of these bodies, an excess essential to the inflammation. Not only the original "cells," but the intervening basis substance will participate in the formation of new

elements or inflammatory corpuscles. Here is the distinguishing feature between modern and antique pathological views, for according to the latter only the "cells" themselves were considered active and capable of proliferation. The sum total of the newly-formed inflammatory corpuscles is known under the term inflammatory infiltration, which means that a certain amount of a tissue, be it connective, muscular or nerve tissue, is replaced by and transformed into newly-appearing protoplasmic bodies in the stage of indifference, that is, being purely protoplasmic tissue bodies without any distinctive character either as to origin or destiny. So long as the inflammatory corpuscles remain in continuity by their delicate offshoots they represent a tissue, though in a condition of indifference, or embryonal state. Such a tissue by new formation of a basis substance will either return to the previous normal state, terminating the inflammatory condition in "resolution," or, being considerably augmented itself, will produce a tissue much greater in bulk than the one originally inflamed and we will have hyperplasia. In neither instance will the inflamed tissue cease even for a moment to be tissue. The tissue which is the bearer of the blood and lymph vessels is the connective tissue, and connective tissue is the only bearer of these vessels. And here is the starting point of inflammation in almost every instance. This we understand from the fact of the rather low dignity and activity of the connective tissue. We look for the greatest reaction on irritation at the sources of nutrition, obviously the blood-vessels. Muscle, nerve and epithelial tissue react in rather a secondary manner on inflammation of connective tissue. Virchow proposed the name "parenchymatous inflammation," for the designation of the inflammatory process, which term may be retained if restricted always to a secondary manifestation upon the primary inflammation of the "interstitial" connective tissue. A gland, for instance, is a compound organ composed of parenchyma according to Virchow, which is the epithelial glandular tissue. This is surrounded with and accompanied by connective tissue bearing many blood-vessels. It is impossible that the glandular tissue could be the primary seat of the inflammatory process. This process will be present in the connective tissue first and more or less rapidly invade the glandular epithelial tissue. If the connections of the inflammatory corpuscles be severed we shall have a certain number of isolated medullary or embryonal corpuscles suspended in an albuminous liquid.

Pus is therefore the resultant of destroyed tissue, but quite unfit for the production of any form of tissue. How much the emigrated blood corpuscles contribute to the formation of pus may not yet be positively stated. However, we do know positively that upon the approach of suppuration

in a certain tissue its blood-vessels are destroyed without exception in the territory involved. The blood-vessels, by outgrowth of their endothelia, become at first solidified and afterwards split up into medullary and pus corpuscles, the same as all the other elemental constituents. Even the smooth muscles of an artery will partake in this pus-forming process. The amount of migrated leucocytes cannot be great, considering the loss of the vessels which have supplied them. Pus is destroyed tissue, first originating in a closed cavity bearing the name of "abscess," or, secondly, coming from the walls of physiologically shut cavities, termed "empyema," or, thirdly, springing from exposed tissue surfaces, viz., such as granulating surfaces of wounds, termed "pyorrhœa." In the two latter instances, namely, empyema and pyorrhœa, the emigration of colorless blood corpuscles plays a far more important rôle than in the case of "abscess." In granulating surfaces of wounds, especially, the source of the pus corpuscles must be sought mainly in the capillaries, which abound in the myxomatous granulation tissue, producing loops therein, upon the grouping of which depends the raspberry look of the so-called "proud flesh." Around an abscess a dense layer of fibrous connective tissue is formed very soon—beautifully displayed in alveolar abscess at the apices of diseased roots of the teeth. This newly-formed layer represents the productive activity of inflammation, being hyperplastic, fibrous connective tissue, more or less well supplied with blood-vessels. Old pathologists termed this layer "*membrana pyogena*," which signifies that the membrane itself produces the pus. This view was abandoned long since, and to-day the *membrana pyogena* is known to be a secondary formation in the appearance of an abscess, as it were, a protective wall to the healthy tissues. After the evacuation of the pus from an abscess or an empyema, either by spontaneous rupture of the covering layer toward the surface, or artificially by knife or caustic, the *membrana pyogena* changes its character and becomes the seat of an acute inflammation, which leads to the formation of a freely-vascularized myxomatous tissue. This is what is called "proud flesh," or granulation tissue. In all instances in loss of tissue by suppuration the final result is the formation of a scar. This consists of a dense fibrous connective tissue whose bundles freely interlace and which is, as a rule, scantily supplied with blood-vessels. It is an outcome of myxomatous granulation tissue and is covered with epithelium whenever the pus has been discharged through the skin or a mucous membrane, which themselves appear in a normal condition with an epithelial layer.

Pus, therefore, is a tissue disintegrated and broken up into indifferent or medullary corpuscles which are suspended in a liquid more or less

rich in albumen. How much the emigrated leucocytes share in the formation of pus corpuscles may not be determined. The pus corpuscles remain alive as long as the liquid surrounding them is sufficient for the support of their nutrition. Even fatty degeneration of the pus corpuscles, as seen in chronic abscesses, will not altogether deprive them of their vital phenomena, such corpuscles, if transferred upon a slide, remain amœboid, and they die only by exposure to a low temperature, or after the addition of chemical reagents, or within the body by being deprived of their nourishing liquid. The last condition is noticed in cheesy degeneration of the pus so often met with in tuberculosis. A question now arises. What is the cause of the formation of pus? Ever since the famous experiments of Cohnheim and Counselman, who introduced vials filled with croton oil under the skin of rabbits, with antiseptic precautions, and after healing was complete cracked the vials, subcutaneously, thus producing an abscess, this is a much mooted question. A host of experimenters who have repeated these trials have taken views pro and con of the question. I consider the experiments of P. Grawitz and W. de Bary, published in Virchow's Archives, 1887, the most valuable testimony towards settling this question. They found that the subcutaneous injection of concentrated solution of chloride of sodium in rabbits and dogs was followed by cedema, a swelling of the facia, but no suppuration. It makes no difference whether the solution be mixed with a large number of staphylococci. Staphylococcus, with its three varieties, the staphylococcus pyogenes, aureo-albus and citreus, first discovered by Rozenbach, was thought to be essential to the production of pus. And even H. Knapp, of New York, maintained that a small quantity of Croton oil mixed with olive oil will not produce suppuration if introduced into the anterior chamber of the eye of the rabbit, whereas the same mixture if contaminated with pure culture of staphylococcus aureus will invariably be followed by suppuration under like circumstances. Grawitz and de Bary, on the contrary, have proven that not only the coccus named, but certain irritating reagents and different products of microorganisms, not necessarily the staphylococcus, different alkaloids, or ptomaines, are productive of pus. Solutions of nitrate of silver, if injected under the skin of dogs, rabbits, rats and mice, will be harmless if weak, not stronger than .005 of 1 per cent., but when 5 per cent. in strength will invariably be followed by abscess in dogs. Neither acids nor alkalies cause suppuration, except the liquor of caustic ammonia, which if introduced in full strength is followed invariably by suppuration. In neither of these instances were there any microorganisms discoverable in the pus freshly removed from the abscess, or transferred upon nutritive gelatine as a culture

medium. Oil of turpentine in rabbits and guinea pigs did not induce pus, even though injected in large quantities, but only inflammation; whereas in dogs oil of turpentine, which is a strong germicide, after subcutaneous injection was always followed by suppuration.

From these experiments it follows that chemical substances entirely free from bacteria and cocci tend to induce the suppurative process in different animals. On the other hand it was experimentally proven that in dogs and rabbits the injection of cultures of staphylococcus into the normal subcutaneous tissues will not induce inflammation or suppuration. It is necessary that a tissue first be irritated to a condition of inflammation, by traumatism or by chemical irritants, to have a soil favorable for the development of staphylococcus, which under these circumstances will produce an abscess. Lately P. Grawitz has shown that the subcutaneous injection of a ptomaine derived from putrescent organic material, called cadaverine, will always lead to the formation of an abscess. From the practical standpoint it is of the utmost importance to work aseptically, or in other words, with such degree of cleanliness that the introduction of microorganisms or their ptomaines becomes impossible. It is well established that even open fresh wounds if aseptically dressed with gauze saturated with a 1:1000 solution of corrosive sublimate and left alone for a few weeks will kindly heal without one single droplet of pus. Corrosive sublimate and carbolic acid are still most reliable germicides. We are not yet prepared to assert that microorganisms alone cause suppuration, since there are irritating chemical substances whose introduction into the body may likewise be followed by this process. Recent observers have maintained that there is a marked difference between a mere accumulation of leucocytes and an abscess proper. In the first instance there may be present a serous or fibrinous exudate entangled with a number of emigrated leucocytes, without a loss of tissue, without, therefore, suppuration. In the latter instance a certain amount of tissue is destroyed and directly transformed into pus. If this view be correct, it certainly strongly supports our present notions of the process of suppuration herewith laid before you in this résumé of my paper.

1. Inflammation is a disturbance of nutrition of a tissue causing a recurrence of the embryonal condition of the tissue involved.

2. The embryonal condition is established by the breaking up of the tissue into those medullary or indifferent corpuscles which, at an early stage of normal development, have built up the tissue.

3. The medullary corpuscles arise not only from the protoplasmic bodies of the tissue, the so-called "cells," but also the intercellular or basis substance is productive of such corpuscles,

as these have shared in the formation of basis substance in the process of normal development.

4. The medullary or indifferent corpuscles will still represent a tissue so long as they remain interconnected and continuous. By a simple reappearance of basis substance the most favorable termination is established, so-called "resolution."

5. If the inflammatory or medullary corpuscles have largely augmented, a number thereby remaining in original connection, the result will be productive, viz.: with a newly formed tissue of increased size, a so-called "hyperplasia."

6. If the inflammatory corpuscles springing from previous "cells," basis substance and blood-vessels break asunder and become isolated, they will be suspended in an albuminous liquid, they will henceforth represent pus corpuscles.

7. Pus, therefore, is a destroyed tissue broken up into its constituent elements, and as such unfit for production of a new tissue, although the single pus corpuscle will remain alive and amoeboid almost indefinitely as long as they are sufficiently nourished.

8. The emigration of colorless blood corpuscles certainly participates in the formation of pus and in the purulent discharge of proud flesh or granulation tissue, and is probably the main source of the pus.

9. Suppuration is caused by the presence of certain microbes, mainly the three varieties of staphylococcus, only when a previous inflammation be present in the tissue, furnishing a favorable soil for the development of the before mentioned microbes.

10. Staphylococcus is not the only antecedent of suppuration, it having been proved by experiments that the introduction of certain chemical agents, unfavorable to the development of microbes, may likewise be followed by suppuration.

THE CLIMATE OF SOUTHERN ALBERTA AND ITS RELATION TO HEALTH AND DISEASE.

Abstract of a Paper read at the Annual Meeting of the Canada Medical Association, Banff, Alberta, August 16, 1889.

BY G. A. KENNEDY, M.D.,
OF MACLEOD, CANADA.

It appears to me that no apology is necessary in introducing the subject of this paper. It is only a few years since the opening of our great National highway brought the Northwest Territories into touch with the rest of the world; and only a few years further back since these vast plains and mountains, which are now so quickly becoming the homes of civilized man, were regarded as an inhospitable desert, fit only for the buffaloes which roamed their solitudes and the Indians subsisting on the chase. The past five years have been epoch-making so far as our great

West is concerned. Coincident with, and following on the building of the Canadian Pacific Railway, a flood of light began to illumine the Eastern intelligence, and as a consequence settlement has steadily and in a gradually increasing stream poured into the Territories.

It will be readily understood that a country almost equal in area to Russia must have many diversities of climate. As I cannot undertake to speak for the whole of the Northwest, I have limited my remarks to that part with which I am best acquainted, viz.: that strip of country lying along the eastern base of the mountains, and more particularly the southern part of this—bounded, say, on the north by the C. P. Ry. I make the eastern limit a line drawn north and south through Lethbridge, although for all practical purposes this line can be extended as far east as Medicine Hat. On the south is the International boundary line, and to the west the summit line of the Rockies and British Columbia. This Southern Alberta comprises an area of 150 miles square, of mountains, foothills and prairie. It is intersected every few miles by mountain streams as yet unpolluted by the filth and garbage of more thickly settled communities. Its general character is treeless save along the valleys of these streams, which are fringed by the willow and cottonwood, and on the sides and bases of the mountains. To the outside world this is known as Canada's grazing country, whence England will draw a large part of its future beef supply. As a sort of corollary to this, it has also been known in a general way that it was reputed to have a milder climate than the rest of the Northwest Territories. To most of you the following description will be not only interesting but necessary to a proper understanding of what follows. It is taken from an admirable paper by Mr. C. C. McCaul, of Lethbridge, published in the August number of the *American Meteorological Review*. After noticing that winter only really sets in about the middle of December, he goes on to say:

It is characterized by a maximum of bright, still, cloudless days, a scanty snow fall, and frequent and prolonged breaks of warm weather, heralded by the Chinook wind, of which more hereafter. Occasionally a bad snow storm will cover the prairie and hill to a depth of 18 or 20 inches. This, however, is very exceptional. The winter generally breaks up in February by a grand blow from the west, followed by a period of from one to three weeks of warm, bright weather, which may fairly be called the beginning of spring. Spring, here as elsewhere, is the most variable and capricious season of the year. On the whole it may, perhaps, be described as cold and damp, with frequent rainfalls, varied by bursts of the most gloriously bright warm weather, lasting sometimes a fortnight or three weeks.

May is generally fine, warm and bright; June

and the earlier part of July rainy; the remainder of July, August, September, October, and generally November, warm and very dry. The summer, July to September, is characterized by hot days and cool nights, with very little rain, but the warm, lazy days of autumn, often lasting well into December, are the glory of the year.

The grand characteristic of the climate as a whole, that on which the *weather* hinges, is the Chinook wind. It blows from west to southwest, in varying degrees of strength, from the gentle breeze that just tosses the heads of the daisies and sunflowers, to the howling gale that carries off contributions of chimneys, barrels, shingles, hats, and miscellaneous rubbish to our neighbors in Assinaboia. In winter, the wind is distinctly warm; in summer not so distinctly cool. Its approach is heralded by the massing of dark cumulus clouds about the mountain tops, and a distant wailing and rumbling from the passes and gorges. Its effect in winter is little short of miraculous. When a *real* Chinook blows, the thermometer often rises in a few hours from 20° below to 40° above zero; the snow, which in the morning may have been a foot deep, disappears before night; everything is dripping; but before another night falls all the water is lapped up by the thirsty wind, and the prairie is so dry that a horse's hoofs hardly make an impression upon it as you take your first welcome canter, after a prolonged and tedious spell of "settin' round the stove."

It may be added to this that the elevation above sea level of the plains here varies from 2,700 feet at Lethridge to 4,500 feet at the entrance of the Crow's Nest Pass, which may be taken as the base of the mountains proper.

The winter and early spring are characterized by the coughs and colds incident to these seasons in almost any country. Summer is very healthy, and in autumn there are occasional cases of malarial fever of a remittent type, of which more hereafter.

Rheumatism is remarkably rare when one considers the sudden changes of temperature that often occur and the fact that most of the male population have led lives of the greatest exposure. When it *does* occur, it is almost always in the subacute or chronic form. Affections of the lungs are also very infrequent.

Summer disorders are almost unknown, a fact which must be attributed partly to the sparseness of population, but which is largely due, in my opinion, to the cool nights. About nervous affections I am hardly in a position to speak, but I judge that the rarefied air and the sometimes high winds would not be beneficial. During the past four years I have had three cases of paralysis—hemiplegia, occurring in patients otherwise perfectly healthy, cowboys in the prime and vigor of manhood, who have had no specific disease and were quite temperate, and whose family history

the most careful inquiry found irreproachable. These cases were and are a puzzle to me, and I can imagine no cause but excessive riding.

I have alluded to the existence of an endemic malarial fever occurring principally in the fall. This is general throughout the territories, and has given rise to much comment and some difference of opinion among medical men. Its character is variously modified by the season, climate, soil and immediate surroundings of the locality in which it is present. It has been called remittent, intermittent, malarial, typho-malarial, and typhoid according as a certain set of symptoms predominated, and is known throughout all the West by laymen as "mountain fever." I have seen this fever at its highest, characterized by a chill and symptoms of a heavy cold, and broken up at once by free diaphoresis and a dose of quinine. On the other hand, I have attended cases in which all treatment was of no avail, cases badly affected by environment, that would go on from bad to worse until they would sink into the typhoid state—too often only the beginning of the end. Between these extremes all grades of severity are met with—their most general characteristic being, however, their atypical character. Routine treatment is therefore impossible except, perhaps, at the beginning, when I make it a rule to relieve the bowels by a calomel purge, promote free diaphoresis by pulv. ipecac co. or antipyrin, sometimes a combination of the two, and give two or three large doses of quinine. Subsequent treatment on general principles.

I have alluded to the different names by which this fever has been called and the consequent confusion. The cause of this is the tendency to regard it as a distinct typical disease, *which it is not*. The cause may be the same (no one, I believe, has ever questioned its malarial nature); but the variations in the course, symptoms and severity are important enough to entitle them to be called almost distinct types. These variations are due to locality, to the season, to different conditions of soil, climate, atmospheric moisture, etc., and to the individual. Another cause of the confusion has been the occasional occurrence of typhoid fever and the incautious use of the unfortunate term "typho-malarial." I say unfortunate because I believe that from the time of its coinage in 1861-2, it has never ceased to be a cloak for uncertainty, an unknown quantity in statistics, and an added difficulty to the struggling and inexperienced practitioner. It would be a good thing, in my opinion, if it were expunged from the nomenclature of disease; for, notwithstanding the care that was exercised in its definition by the U. S. Commission, wherein it was distinctly pointed out that it was "not a specific or distinct type of disease, but a term conveniently applied to the compound forms of fever which result from the combined influences of the causes of the malari-

rious fevers and typhoid fever," *there has been a tendency to elevate it into a distinct type of disease.* In the Northwest, while I have often seen severe cases of malarial remittent falling into the typhoid state and cases of typhoid masked at first by malaria; while I confess I have been sometimes at a loss at first to classify my case, I can hardly recall an instance in which waiting a few days did not clear up the diagnosis.

In 1886 I made an attempt to have collected detailed reports of all cases of fever occurring throughout the Northwest, so that the special features of each district might become better known. This attempt was frustrated through ignorance or misapprehension of my motive. It is a matter of regret to me that my suggestions were not adopted, for I am not one of those who believe that we have reached the sum possible of attainable knowledge with regard to malaria. We owe much to the researches of Thomanasi, Crudele and Klebs, Laveran, Osler and Carter, in tracing out the life history in the blood of the malarial plasmodium. But I believe the future has still something to unfold to us of its nature, mode of action outside of, and entrance into the human system. And I believe we have yet much to learn of the relations between the paludal and typhoid poisons. I find it difficult to believe the story of the statistics which tells us that typhoid fever pure and simple is three, four and five times more fatal than the same fever complicated with malaria, and I believe that more care in the diagnosis, which is now rendered somewhat easier by the application of Ehrlich's test; more thoroughness in the recording of cases, and more attention to etiology, will help us to clear up these doubtful points which few will question are stumbling-blocks in our path.

I trust that I have not been misunderstood—that while remarking on this fever at greater length, perhaps, than its importance warrants, I have not led you to the belief that it is a constant menace to life, and health in Southern Alberta. I should be sorry to have made this impression, which would be an entirely false one. Some years the country is entirely free from fever; and generally it is mild and readily amenable to treatment. And severe cases will no doubt become rarer when greater care is exercised in personal and domestic sanitation.

I believe I have now said the worst that can be said of the climate of Southern Alberta, and I consider that in doing so I have earned the right to dwell briefly on what appears to me its distinguishing characteristic. I allude to its freedom from diseases of the lungs and its value as a resort or place of living for phthisical patients. I have already spoken of the rarity of pneumonia and other lung affections. I know of two cases of phthisis occurring in the country—one of acute tuberculosis strongly hereditary, and which proved

fatal, and another of fibroid, the cause of which I believe to be the fine dust of the corral acting in the same manner as stone mason's and knife grinder's disease. This latter steadily improved on ceasing work and is now almost well.

On the other hand, I have known of a great many cases of incipient phthisis that have come to Alberta, and in some the disease has been arrested and in others the sufferer restored to perfect health. These facts will not appear strange when the prevailing conditions are considered; for, according to the latest consensus of opinion among climatologists, the climatic treatment of phthisis requires:

1. A dry aseptic atmosphere.
2. A dry soil.
3. The greatest possible number of clear, sunshiny days during which the invalid can exercise in the open air.

4. A certain amount or degree of elevation above sea level. Equability of temperature within certain limits is not now considered necessary.

I believe I may assert without danger of contradiction that Southern Alberta possesses all these requisites in the most eminent degree. The dryness of the atmosphere is insured by the character of the country, a great grassy, undulating, treeless plain, elevated from 2,000 to 5,000 feet above sea level and distant several hundreds of miles from any considerable body of water. Accurate meteorological data are wanting, but it is sufficient to say that Alberta is not different from that whole strip of country lying at the eastern base of the continental watershed, and which the absence of a sufficient rainfall has caused to be devoted principally to the raising of stock. This dryness of the air, combined with its elevation, almost necessarily renders it aseptic in a wonderful degree.

Elevation is not now considered an essential feature in the climatic treatment of phthisis. The altitude theory, which Miguel did so much to bring into favor and which was so great an advance on the indiscriminate employment of places like Madeira and Havana—places where warmth and equability of temperature and a certain degree of moisture were prevailing features—is now slowly going out of fashion. But it is doubtful if even the immense power of fashion—which, it is to be deplored, is almost as great in medicine as in millinery—will ever be able to seriously affect in the medical mind the value of elevation. The reason it is not so much considered now is that it was found that the curative properties were the dryness and purity of the air, and not necessarily the elevation. But it is difficult, almost impossible, to find a dry aseptic atmosphere¹ without the elevation being near sea level, and for this reason, if for no other, patients in search of a climate will still throng to the elevated regions. Besides, the

¹ Excepting Aiken, Georgia.

other physiological effects of elevation; the increased respiratory activity and expansion of the lungs and chest walls, the consequent increased nutrition, the cool nights, almost compelling sound and refreshing sleep, are features of no little value in the altitude treatment. As before mentioned, the elevation in Southern Alberta varies from 2,000 to 5,000 feet, and the patient can therefore choose the locality which seems to suit best his particular case.

Laennec, Bowditch, Buchanan and others having made it very clear that soil moisture is one of the chief causes of phthisis, a dry soil must be considered a necessity for any place putting forth claims to be regarded as a resort or place of living for consumptives. While I am not able to give the geological formation of Southern Alberta, I can assert without fear of contradiction that its soil must be regarded as preëminently a dry one.

Perhaps a more important point than any of the foregoing—certainly a most necessary one—is the number of days during which patients can take exercise in the open air. Here the want of meteorological observations is again severely felt, but from a private record kept during the five years ending December, 1888, I am able to deduce the following: The number of days which are recorded as overcast, raining and snowing is respectively 51, 49, 56, 53, 44, being an average of a fraction over 50, all the rest being noted as fine. Over 50 per cent. of these (fifty) are simply overcast, so it is fairly presumable that in the large majority of them, confinement to the house would be unnecessary. These observations, moreover, were taken very close to the mountains, where local storms are more prevalent than on the plains.

As to the class of cases for which Southern Alberta is suitable I am content to take Dr. Knight's selection, which is, I believe, approved by the great balance of authority on the subject. It comprises:

1. Those presenting the earliest physical signs of tuberculosis of the apex, who have as yet shown little if any general disturbance from the disease, and who complain only of morning cough and expectoration. As Dr. Knight very truly remarks, the prognosis in this class has been changed from very bad to very good by the improved ideas of treatment.

2. Hæmorrhagic cases without marked febrile reaction or much physical evidence of disease.

3. Certain cases of "fibroid" or "interstitial" pneumonia.

4. Patients recovering from acute pleurisy or pneumonia in whom the irruption of tubercle is dreaded.

For these classes of cases, Southern Alberta offers inducements hardly excelled by any place on the continent. I trust I have already satisfied you that the necessary climatic conditions are present: the dry aseptic atmosphere, the dry soil,

the clear sunshiny days and the necessary elevation. There are one or two other points which I feel compelled to mention. One is that seekers after health are not obliged to remain for a few months only, and then go away again on the approach of winter or summer. Another is that, being a stock-raising country, it is easily possible to spend almost all one's time in the saddle. It was Sydenham who said that "unlimited horseback exercise is almost as good a cure for phthisis as quinine for ague." Another is that Alberta is in Canada, for why should Canadian physicians send their patients to Colorado when they have a climate equally as good within the confines of their own Dominion?

The general conditions of life are those of any new and growing country. Many of the pleasures of the East have to be dispensed with, but to most people, the bright sunny skies, the pure, bracing, intoxicating air, the exhilarating freedom of outdoor life and the unrivaled scenery of Alberta, will amply compensate for the artificial pleasures they are obliged to forego.

MEDICAL PROGRESS.

JABORANDI AS A PARTURIFACIENT.—Under this caption Dr. N. P. Moss reports a few cases (*N. O. Med. and Surg. Journ.*) in which jaborandi seemed to expedite labor, and his explanation of the *modus operandi* of the drug is unsatisfactory, as he seems to attribute it merely to its diaphoretic properties. His cases are also not numerous enough to serve as a basis for accurate deductions. Pilocarpin has been proven beyond doubt to possess a powerful action upon the uterus, and it has been employed to a considerable extent as an abortifacient. Professor Schauta, of Prague, has employed pilocarpin in more than forty cases as a means of strengthening labor pains. Injected subcutaneously he has found it active in 2 per cent. solution, although he has also used it in 3 or 4 per cent. solutions. Schauta went so far as to measure the effects of his doses by means of the manometer, and reached the conclusion that the influence of pilocarpin upon the uterus is a very powerful one, although it varies greatly according to individual susceptibility. In 1881 Van der Mey made experiments upon pregnant rabbits from which he obtained similar results. Gigollet has reported the case of a woman in whom premature labor was twice induced by the administration of pilocarpin, three injections at intervals of four hours having proved sufficient. Prof. Schauta gives the following rules for the administration of pilocarpin: After careful examination of the organs of respiration and circulation I would administer on the first day, if necessary,

as many as three injections of a 2 per cent. solution. If by the second day no contractions had supervened, I would use not more than two injections of a 3 per cent. solution; and finally, on the third day one or two injections of a 4 per cent. solution, employing always the muriate of pilocarpin. If I obtained no action by the fifth day I would resort to other measures. It would be absurd to abandon the use of muriate of pilocarpin, which has proved itself such an excellent ebolic remedy in some cases, simply because it has not been found active in all cases when used in a 2 per cent. solution.

ABDOMINAL ANEURISM.—DR. WM. F. DREWRY, of Petersburg, Va., reports the following case: The patient, a negro æt. 60 years, was admitted into the Central Lunatic Asylum of Virginia on March 15, 1889. An aneurism of the upper third of the abdominal aorta was easily diagnosed. Iodide of potassium, acetate of lead, anodyne embrocations, etc., were prescribed. On May 17 the patient died while asleep. An autopsy revealed the following conditions: In the upper half of the abdominal aorta, in the vicinity of and involving the orifice of the coeliac axis, and arising from the anterior face of the aorta, a false sacculated aneurism was found, with a mean diameter of 6 inches. It was intimately adherent to the adjacent tissues and encroached somewhat upon the spinal column. The sac had ruptured, perforating the diaphragm, and the contents had escaped into the left pleura. The reporter refers to the following statistics: Of 551 cases of aneurism of the aorta tabulated by Crips, only 59 were abdominal. Of 880 cases collected by Sibson only 177 occurred in the abdominal portion, and of this number 131 were located at or near the coeliac axis. Of 103 cases of abdominal aneurism collected by Lebert only 3 occurred at or near the bifurcation. Biggs, of New York, has recently reported 33 cases of aneurism of the aorta, only 4 of which were in the abdominal pylorus. Regarding the termination of abdominal aneurisms Sibson says: Seventy-seven per cent. rupture—28.5 per cent. into the peritoneal cavity; 22 per cent. into the subperitoneal tissue in the left hypochondriac region. — *Virginia Medical Monthly*, July, 1889.

PEPTONURIA IN PREGNANCY. By DR. WILLIAM FISCHER.—In my work on puerperal peptonuria, I reported casually the occurrence of peptone in the urine of pregnant women. I wish to add that the pregnant women referred to were kept under observation up to the time of their confinement and even beyond, and that they remained healthy and especially were free from skin eruptions and syphilides. They all bore healthy living children. Inasmuch as I found peptone in one-fourth of the urine examined, I cannot at all agree with Dr. Koettwitz (*Deut. Med. Woch.*, 1888, p. 613), who, as the result of his observations, re-

ported that the peptonuria of pregnancy is followed by death and maceration of the fœtus. Peptonuria certainly does occur in cases where the fœtus does not die. I cannot say whether Koettwitz's negative results of examination depend upon the reaction adopted by him, or whether it was a matter of chance that he always found the urine free from peptone. The positive results which I obtained by careful analyses according to approved methods, in Prof. Huppert's laboratory, cannot be set aside, whether they appear plausible or not.

I also wish to direct attention to the fact that the conditions explained by Dr. Koettwitz, under which alone he conceives the peptonuria of pregnancy possible, would be explained by me in the same manner. But it must be remembered that the pains of pregnancy do not occur merely at the end of gestation, as Dr. Koettwitz says, but during the entire period thereof, and accordingly, on the basis of this hypothesis, peptonuria may occur at any time during pregnancy. That this hypothesis is not proven, appears from my former reports; as does also the fact that it is not the only conceivable one.—*Centralbl. für Gyn.*

A CASE OF FŒTUS PAPYRACEUS.—DR. E. W. MULLIGAN, of Rochester, N. Y., reports a case of this kind. He first saw his patient in November, 1888, when she was apparently having labor pains. She considered herself to be in the sixth month of pregnancy, although the large size of the abdomen seemed to indicate a more advanced pregnancy. Patient was not seen again for three months, when she was found in labor; the abdomen, curiously enough, was much smaller than it was three months before. Patient soon gave birth to a child weighing 10 lbs. which was immediately followed by the expulsion of a dead fœtus. This was flattened out and seemed to correspond to the sixth month of foetal development. The cord was slightly attached to the border of the placenta. The woman now said that soon after the physician's previous visit the membranes broke and almost a *pailful* of clear fluid escaped, after which the pains subsided and she went about her duties as usual.

Double Vagina and Uterus.—Dr. Mulligan also reports for Dr. Jonas Jones the case of a well developed woman 25 years old, married two years without children. External genitals normal. There are two vaginæ situated side by side, the opening of the left one being a little above and to the right in relation to the other. They appear to be about the same size, but the right one, having been used, received the speculum more readily. Each uterus is 2½ inches in depth, the os being normal in each. The patient has had two miscarriages in the past three years, miscarrying each time when two months pregnant.—*Buffalo Med. and Surg. Journal*, August, 1889.

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SATURDAY, SEPTEMBER 14, 1889.

GRAILEY HEWITT¹ ON THE SEVERE VOMITING
OF PREGNANCY.

DR. GRAILEY HEWITT'S most recent communication "On the Severe Vomiting of Pregnancy," read at the last meeting of the American Gynecological Society, merited critical attention and adequate discussion. But it is a somewhat remarkable fact that neither the presence of the distinguished author himself, nor the valuable nature of his essay, was sufficient to draw out lively debate. The explanation, however, of this apparent slight put upon a foreigner is not hard to find. The surgical aspects of obstetrics and the diseases of women received the attention that ought to have been devoted to equally weighty matters of internal medicine.

Dr. Hewitt's paper relates chiefly to etiology—undoubtedly the topic of greatest import. He writes: "The conclusion suggested is, substantially in agreement with the opinion of Desormeaux, expressed some years ago, that the vomiting is due to interference with expansion of the uterus. The cases related in this paper appear to show that there are two factors which principally contribute to this interference with uterine expansion: 1. Incarceration of the uterus in the pelvis associated with flexion or version; and 2. Undue hardness and rigidity of the tissues of the cervix and around the os internum. Also that these two factors are in most cases associated."

Those familiar with the earlier utterances of Dr. Hewitt will recognize a material change of

opinion in this most recent expression. Flexions and versions, in general, and antelexions in particular, no longer exercise dominant power in determining hyperemesis. But this amended hypothesis is no more equal to the explanation of all recorded cases of the uncontrollable vomiting of pregnancy, than were its less pretentious antecedents.

In the limited space at our command, it is impossible to enter into a detailed criticism of Dr. Hewitt's analysis and elaborate classification of recorded cases. In passing, however, it may be remarked that in the construction of his premises, he has assumed the question at issue, while he treats with a certain insular arrogance the opinions of other observers. Indeed, his treatment of the entire subject can hardly be regarded as candid.

In a number of cases, quoted in his paper, and in a still larger number of examples described in the literature of the subject, the vomiting and prostration either appeared for the first time, or became marked, after the uterus had passed upward out of the pelvis into the abdominal cavity. In other words, the symptoms presented themselves at a time when the operation of the factors mentioned by Dr. Hewitt must have been physically impossible.

There are scarcely six cases of incarceration of the ante-flexed pregnant uterus on record. Then the symptoms of incarceration of the pregnant uterus, whether it be bent or turned forward or backward, or fixed by exudates and the like, make up a clinical picture essentially different from that we see in the uncontrollable vomiting of pregnancy. Incarceration causes pronounced local disorders, in connection with the function, of the bladder and rectum, that are more or less acute. These disturbances commonly attract the patient's attention to her own condition. When vomiting occurs it is usually the vomiting of ileus, not of pregnancy. The clinical characters of the vomiting from incarceration of the pregnant uterus are not identical with the appearances of hyperemesis gravidarum. The former is a subordinate phenomenon, appears late, and lasts necessarily but a brief period. The latter rules the situation from the first, constitutes the complete clinical picture of the disease, and runs a chronic course.

Dr. Hewitt does not mention a considerable

¹ Transactions of the American Gynecological Society, Vol. xiii, 1885. British Medical Journal, 1889.

class of cases, in which the determining cause of the vomiting is found in some morbid state of the gastric mucous membrane, often existent before conception. It is well-known that pregnancy not only often exaggerates physiological processes into morbid activity, but also that it seriously aggravates conditions of little moment in the non-gravid woman. The adjuvant cause of hyperemesis gravidarum is not uncommonly discovered in latent chronic gastritis, or in acute gastritis arising during pregnancy. Gastric ulcer is of more common occurrence and attended with greater significance in pregnant women than is generally believed.

The causation of the uncontrollable vomiting of pregnancy constitutes a most intricate problem, and while etiological research has cleared up some obscurities, there still remain cases in which the autopsy fails to disclose any adequate objective changes. Under such circumstances is it not better to admit ignorance, rather than to force a favorite hypothesis?

MEDICAL ORGANIZATION.

At a recent session of the California State Medical Society, a resolution was adopted declaring that continuous membership in a local society, where one exists, is essential for membership in the State society. In pursuance of this action, the Sacramento Society, regarding this as an important step in the maintenance of the local organization, adopted similar action.

We are glad to note this as a real advance in the proper direction. In a number of States, the State society only exists as the parent head of the county or other local societies. This we believe to be the only proper means to secure the organization of the profession and to control those who are inclined to irregularities. In the early days of medical societies, especially in the new States, it was not always possible to wait on the local bodies prior to the formation of the State body. In fact, in some instances it was necessary to combine the members of the profession in a State medical society at the outset, and by means of organizing committees to cause the local societies to radiate from it as a centre.

But medical organizations have now become so well known and their workings so well understood that this plan is no longer needed. Every county

should have its own society, or where the members of the profession are extremely few in number, let them join with one or more adjoining counties and form a district society, which should annually send its delegates to the State society and to the American Medical Association. By the amendment to the laws of this latter body, providing for "Members by Application," every regular physician has an opportunity to become a full member of the general body. This should be embraced by all and the admission of "Members by Invitation" should be of rare occurrence. This latter privilege should only be accorded to distinguished strangers, and never to those who are able to join by application, or who do not feel sufficient interest in their local society to aid it by their money and influence.

Although the next session of the American Medical Association will not take place until May of 1890, yet it is none too early for the profession of the South and West, in whose midst that session is to be held, to take steps toward the thorough organization of every portion. The session at Nashville should be one of the grandest gatherings ever assembled. As the securing of rates on the railroads will on that occasion be solely confided to the hands of one person, and as he is the one to whom application is usually made by those who desire to obtain these reductions, we feel confident that on this occasion it will, if possible, be secured in abundance of time for all to avail themselves of the reduction.

The organization of a medical society need not be a difficult task. In districts not yet provided for, let the physicians assemble at the call of one of their number. There is always a central figure around whom the rest will cluster; let him issue a call and see to it that no worthy member is omitted. In medicine there is no creed or politics. Every physician should be admitted to the local society against whom there is no charge of irregular conduct. Let the assemblage adopt the simplest laws for its government, place the fees of whatever kind as low as will be sufficient to provide for the maintenance of the society, select the best members for officers, particularly for president and secretary, for upon these two officers the whole usefulness of the body will depend. This done, let the society apply to the State Medical Society for recognition by representation, as upon such recognition de-

pend its right to send delegates to the American Medical Association. Such an organization will continue as an integral part of the medical fraternity with but little effort on the part of its members.

To make the sessions useful and attractive, it would be well to have a committee on essays, whose duty will be to provide for each meeting some literary entertainment in the form of an essay, clinical report, or similar matter, and the hour of meeting will soon come to be regarded as a pleasure and its coming anticipated by all.

In many such meetings we have known them to be looked forward to as an opportunity to renew friendly greetings, to make new acquaintances, as well as to learn what was new in the profession.

In a very large experience of this kind, we have known the warmest friendships to have been formed, mutual misunderstandings explained, a feeling of sociability to be established, which has done much to cause the entire profession of the locality to gain the respect of the community. In conclusion, let us urge these points upon the profession everywhere; organize, and where societies already exist, make them stronger, bring in every one who is eligible; thus you will elevate the profession at home, in your State, and in the whole country.

EDITORIAL NOTES.

HOME.

TYPHOID FEVER IN INDIANA.—Typhoid fever prevails at Dundee and Connorsville. It is of a malignant type and is spreading rapidly.

A PECULIAR CATTLE DISEASE.—Cattle are dying in the vicinity of Dallas City, Hancock county, Ill., of a strange disease. They become stiff in the hindquarters and suddenly drop to the ground, dying in great agony.

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, which concluded its sessions in Toronto last week, decided to hold its next meeting at Indianapolis in August, 1890.

WOMAN'S MEDICAL COLLEGE OF CHICAGO.—The Woman's Medical College celebrated the opening of its twentieth year of instruction on the 3d inst. at the College building on South

Lincoln street. Dr. William H. Byford, President, and Professor Mary Mixer made brief addresses. Already over one hundred students have been enrolled for the present year, a very large increase over the former attendance.

THE AMERICAN SOCIETY OF MICROSCOPISTS held their twelfth annual meeting at Buffalo during the third week in August. There was a large attendance of members and the following officers were elected: President, George E. Fell, M.D., Buffalo; Vice-Presidents, W. H. Seaman, Washington, D. C., and F. W. Kuhne, Fort Wayne, Ind.; Treasurer (to fill the unexpired term of Dr. Mosgrove, resigned), C. C. Mellor, Pittsburgh, Pa.; Executive Committee, W. P. Manton, Detroit, Mich.; Dr. Frank L. James, St. Louis; W. H. Walmsley, Philadelphia, Pa. The time and place of next meeting is not yet announced.

THE ASSOCIATION OF AMERICAN PHYSICIANS, as previously announced, will hold their Fourth Annual Meeting at Washington on the 18th, 19th and 20th insts., under the presidency of Dr. Francis Minot, of Boston. Papers will be read on the following subjects: "The Early Stage of General Paralysis," by Dr. C. F. Folsom, of Boston; "Tetany," by Dr. James Stewart, of Montreal; "Tetany and a New Theory of its Pathology," by Dr. John T. Carpenter, of Pottsville; "Thrombosis of the Cerebral Sinuses and Veins," by Dr. A. B. Ball, of New York; "Chylous Effusions into Serous Cavities," by Dr. S. C. Busey, of Washington; "Substitutes for Opium in Chronic Diseases," by Dr. J. F. A. Adams, of Pittsfield; "Remarkable Case of Slow Pulse," by Dr. D. W. Prentiss, of Washington; Discussion on the Relation between Chlorosis, Simple Anæmia, and Pernicious Anæmia, including Leucocythæmia and Hodgkins' Disease, Referee, Dr. Frederick P. Henry, of Philadelphia, Co-Referee, Dr. F. Forcheimer, of Cincinnati; "Primary Cancer of the Duodenum," by Dr. E. N. Whittier, of Boston; "Primary Cancer of the Gall Bladder and Ducts," by Dr. John H. Musser, of Philadelphia; "Gastric Neurasthenia," by Dr. G. M. Garland, of Boston; "Specimens from Two Cases of Cretinism," by Dr. W. F. Whitney, of Boston; "The Anatomical and Physiological Relations of Lesions of the Heart and Kidneys," by Dr. H. F. Formad, of Philadelphia; "The Contagium of Diphtheria," by Dr. P. Gervais

Robinson, of St. Louis; "A Supplementary Inquiry into the Frequency with which Lead is Found in the Urine," by Dr. James J. Putnam, of Boston; Discussion on the Relations of Rheumatism to Rheumatoid Arthritis. Referee, Dr. William Osler, of Baltimore, Co-Referee, Dr. Morris Longstreth, of Philadelphia; "How Far may a Cow be Tuberculous before the Milk Becomes Dangerous as a Food Supply?" by Dr. Harold C. Ernst, of Jamaica Plain; "The Bacillus Tuberculosis," by Dr. J. T. Whittaker, of Cincinnati; "Hot Air Inhalations in Tubercloses," by Dr. E. L. Trudeau, of Saranac Lake.

MORE EXPERIENCE WITH THE "ELIXIR OF LIFE."—Samuel C. Showalter, of Dayton, Ohio, aged 60, voluntarily submitted to injection of elixir of life three weeks ago, hoping for relief from rheumatism, and died on the 2d inst. from the effects of the treatment. Immediately after the injection was made his limbs began to swell and his whole system was permeated with blood poison.

THE DEATH-RATE IN CALIFORNIA.—The deaths registered in 81 town districts of California, with a population of 790,700, corresponded, for the month of July, to an annual rate of 13.33 per mil. The average annual death-rate from all causes occurring in the ten largest cities and towns, with a population of 620,000, was 12.57 per mil.

METEOROLOGICAL REPORTS from San Diego and San Francisco for June, 1889, furnish the following data: Mean temp., San Diego, 64°; San Francisco, 58.1°. Highest temp., San Diego, 72°; San Francisco, 75°. Lowest temp., San Diego, 56°; San Francisco, 52°. Mean daily range of temp., San Diego, 10.5°; San Francisco, 12.1°. Total rainfall, San Diego, 0.10; San Francisco, 0.03.

THE USE OF MORPHINE IN DELIRIUM TREMENS.—Another one of those cases (unfortunately by no means rare) where a patient suffering from delirium tremens dies after the administration of moderate doses of morphine is reported in the *Occidental Medical Times*. In this instance, as often happens, the press dispatches reported that death occurred from an overdose of morphine administered by the physician. The autopsy showed no evidence of morphine poisoning, but

did reveal a clot in the left lateral ventricle. In view of the fact that such reports are often recorded and that opium is an unsafe remedy in cases of threatened apoplexy, the physician certainly acts the part of prudence when he withholds the use of morphine in delirium tremens and trusts to more reliable sedatives.

LORETA'S OPERATION FOR STRICTURE OF THE PYLORUS.—Dr. T. W. Huntington, of California, reports a case where he performed Loreta's operation for stricture of the pylorus in a patient who had suffered from gastric derangement for three years. After dilation of the constricted portion the former symptoms disappeared, and five weeks after the operation the patient had resumed his usual diet and is pronounced practically well.

METAL REMOVED FROM THE EYEBALL BY AN ELECTRO-MAGNET.—Dr. W. E. Briggs, of Sacramento, reports, in the *Occidental Medical Times*, nine cases of operation for removal of metal from the eyeball by means of the electro-magnet. There were two successful cases of removal from the anterior chamber, three of removal from the vitreous, and one of removal from the ciliary regions. In two cases of failure, enucleation of the eyeball followed, and in one case of failure the patient refused enucleation and passed from observation. Dr. Briggs summarizes his conclusions as follows: The electro-magnet is generally a safer instrument for the extraction of fragments of steel from the anterior chamber, from the iris, or from the anterior portion of the lens, than the forceps. It is practically our only resource when the steel has penetrated the vitreous chamber. It is safe to retain, quite extensively, injured eyes, if the offending body be promptly removed and thorough asepsis observed.

AN ARMY MEDICAL BOARD will be convened in New York City, New York, October 1, 1889, for the examination of such persons as may be properly invited to present themselves before it as candidates for appointment in the Medical Corps of the Army. Application for invitation should be addressed to the Secretary of War, stating date and place of birth; place and State of permanent residence, and accompanied by certificates, based on personal acquaintance, from at least two persons of repute, as to citizenship, character, and moral habits; testimonials as to professional standing, from the professors of the medical col-

lege from which the applicant graduated, are also desirable. The candidate must be between 21 and 28 years of age, and a graduate from a regular medical college, evidence of which, his diploma, must be submitted to the Board. Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

FOREIGN.

TO INSPECT DRAINAGE SYSTEMS.—Ellis Clark, President of the Association of Municipal and Sanitary Engineers of England, will sail on the *Servia* on the 21st inst. for the purpose of acquainting himself with the methods adopted in large cities in the United States for the disposal of sewage and refuse, and also with internal sanitary arrangements.

COLLECTIVE INVESTIGATION.—It is to be regretted that the Collective Investigation Committee of the British Medical Association, from whom so much was expected, feels obliged to recommend the abandonment of the work of collective investigation. The Committee reports that the returns received upon the subjects which have been taken up have been so few that they do not feel justified in continuing the inquiries further or in entering upon fresh ones.

THE TERCENTENNIAL OF THE MICROSCOPE.—Preparations are being made in several German towns to celebrate next year the three hundredth anniversary of the invention of the microscope. Zacharias Janssen, of Madgeburg, is credited with having constructed the first microscope in 1590.

DR. LUSTGARTEN.—It is announced that Dr. Lustgarten, of Vienna, is about to remove permanently to this country. Dr. Lustgarten will be remembered especially by reason of his discovery in 1885 of the bacillus of syphilis. At the time his report was received with a great deal of incredulity, but it was not long in obtaining the recognition of the highest authorities. As Assistant to Prof. Kaposi (the successor of Hebra) Dr. Lustgarten became personally known to many of the American physicians who have visited Vienna within the last few years.

PROFS. BREISKY AND ULTMANN.—The Vienna Medical Faculty has recently suffered severe losses in the death of Prof. Breisky, the distin-

guished obstetrician, and that of the no less eminent professor of urinary diseases, Prof. Ultmann, both of whom were well known in this country for their valuable contributions to medical literature. Prof. Ultmann, from his longer residence in Vienna, was particularly well known to us, and numbered his American pupils by the score. Those who were so fortunate as to have attended his admirable clinics at the Policlinic will long retain pleasant recollections of his skill as well as his kindly demeanor toward his patients.

AN INQUIRY INTO THE MANAGEMENT OF MEDICAL CHARITIES.—The following resolution will be moved at the next session of the British Medical Association: "That this meeting of the British Medical Association views with great pleasure the action of the Charity Organization Society of London in presenting a petition to the House of Lords praying for an inquiry into the management of the metropolitan medical charities, and earnestly hopes that the scope of the inquiry will be extended so as to include provincial hospitals and dispensaries, with the view of obtaining as complete information as is possible upon this important subject; that a copy of this resolution be forwarded to the Lord President of the Privy Council, and that he be requested to receive a deputation; that the Council be requested to appoint a special committee to deal with the question, and request the Charity Organization Society of England to form a similar committee to act in conjunction with it."

IN GREAT BRITAIN a new wing is about to be added to the Leeds Infirmary. Dr. Thomas King Chambers, honorary physician to the Prince of Wales and a member of the General Medical Council, is dead. An epidemic of typhus fever has been prevalent in the Marshalltown division of the Mitchelstown district, Ireland. Londoners have been alarmed over an alleged outbreak of typhoid fever in the West end. The Glasgow Town Council have been considering the necessity of making new arrangements for meat inspection, and have decided to place the inspection of meat in charge of the sanitary department, and have appointed a committee to consider what further legislation is necessary to secure the public against the sale of tuberculous and infected meat. At the recent quarterly meeting of the Royal College of Surgeons of England Mr. Jonathan Hutchinson was elected President, and Messrs. Bryant and Croft Vice-Presidents.

TOPICS OF THE WEEK.

THE HYGIENIC USES OF THE IMAGINATION.

In a recent editorial entitled "CONSIDERATE JUDGMENT," we endeavored to emphasize the necessity of basing conclusions upon well ascertained facts, and stated that only those theories which could be thus substantiated would be found enduring. But in the attainment of truth we are by no means debarred the full and free play of a well disciplined imagination; indeed, it often points the way to undiscovered truths; it is by no means infallible; its suggestions always need verification; but imaginations verified become with us accepted facts. Under the above heading, at the recent meeting of the British Medical Association, SIR JAMES CRICHTON BROWNE presented a very able address which is reported in the *British Medical Journal* of August 24, and from which we make the following abstract:

The cultivation of the imagination, then—and it can be cultivated and disciplined to agility and steadiness of action—is of high importance to us as medical men; for it can be serviceable to us in collecting materials, in solving difficult problems, and, by the analogies it suggests, in guiding us in our life-long search after truth. The precise character which medicine is happily assuming, as its several departments merge into the exact sciences, and which demands of its cultivators a physico-mathematical and chemical training of ever increasing stringency, does not in any degree abrogate the necessity for the employment of the imagination. On the physical side of medicine that still holds its own, and on its psychical side it is indispensable in dealing with phenomena that are beyond the province of physical and chemical research. Medical men and medical students, then, need not fear that they are altogether wasting their time when they turn aside now and then from their professional tasks to ramble for a little in the green pastures of literature, or climb the pinnacles of art. True, their imagination may be fully trained for its professional duty, as it is exercised, in conjunction with observation and judgment, in the scientific sphere; but it will be braced, invigorated, and have its resources multiplied, by recreating occasionally in its native air. Even if imaginative pursuits did not strengthen the hands of medical men in grappling with disease, or quicken their scientific vision, these would still be commendable, because of the refreshment they bring to jaded brains. To turn from the fatigue and anxieties of practice into realms where rivalry is no more and night bells never ring is to plunge into one of the most soothing and depurative of "tired Nature's" baths. Members of our profession are, I suspect, generally aware of this, and resort to imaginative literature, music, and art more than any other class of professional men, except, of course, artists and men of letters, and to an extent that is remarkable, considering the engrossing claims made on their time and the scant leisure they enjoy.

The contributions of medical men to the departments of imaginative work have been far from insignificant. At least four eminent members of our profession now living might be named who have found leisure, amidst

absorbing occupation, so to use the pencil and brush as to gratify not only their private circles but the public, and a list of medical poets would be a long and goodly one, including such names as Akenside (the gifted singer of the pleasures of that imagination whose usefulness I am attempting to extol), Garth, Blackmore, Goldsmith, Smollet, Armstrong, Erasmus Darwin, Crabbe, Moir (better known as Delta, John Brown, whose *Rab and His Friends* is idyllic, and Oliver Wendell Holmes. Nay, even one or two of the greatest names in poetical literature might not improperly be added to such a list. Keats was apprenticed to a surgeon at Edmonton, and afterwards attended St. Thomas' Hospital. It has been argued, I am afraid not very convincingly, that Shakespeare's extensive medical knowledge proves him to have been engaged in the study of medicine during one or two of those years of his life that are unaccounted for, but it is indisputable that Dante was enrolled amongst the *medici e speziali* (leeches and druggists) of Florence, and that he attended their council meetings for several years. But it is not as producers but as consumers of poetry and imaginative literature that medical men derive from them their restorative influence; and as consumers they are, I feel sure, amongst the bookseller's best friends. Sydenham, when asked by Sir Richard Blackmore what course of study he would recommend for a medical student, replied, "Let him read *Don Quixote*, it is a very good book; I read it still." Connolly, the apostle of that non-restraint system to which we owe everything that is most excellent in the treatment of the insane in this country, and with which I trust professional opinion and public sentiment will permit no tampering—Connolly told me in his latter years that he took ever renewed delight in *Gulliver's Travels*. I know hard-working doctors in town and country who hold habitual converse with some of our great imaginative writers. Two of the most distinguished and busiest physicians of this day are, to my knowledge, inveterate novel readers. I have heard one of our great surgeons deliver an address betraying a deep study of the poetry of Keats; and another of our great surgeons, present at this meeting, told me recently that on his way to and from every serious operation he dips into Shelley.

But it may be objected that the imagination, if sometimes stimulating and restorative in its influence, is often morbid in its tendencies, and that its indulgence is to be guarded against by those who desire to possess well regulated minds. "No habit can be more opposed to a healthy condition of the mental powers," says Abercrombie, "than that which permits the mind to wander in a mere vision or waking dream from scene to scene, unrestrained by reason, probability or truth;" and the answer to Abercrombie is supplied by Tyndall, who says that those who have denounced the imagination because they have seen its disastrous effect on weak vessels, "might with equal justice point to exploded boilers as an argument against the use of steam." But the weak vessels wrecked by imagination are really fewer than is commonly supposed. Now and again some erratic genius, of highly strung nervous temperament, gives himself up to the pleasures of imagination till he becomes intox-

icated with them, and staggers over the boundary of sanity. Now and again an intensely imaginative child, like Jerome Cardan or Hartley Coleridge, so indulges in day dreams that his fancies grow into phantoms that haunt him; but I do not hesitate to say that for one case of insanity caused by excess of imagination, there are a dozen caused by the want of it. Apathetic dulness and torpor of mind are apt to deepen into dementia; and those entirely given up to "the care of this life and the deceitfulness of riches" are more likely to be choked by them than those who can surmount them, and breathe the free and ample air of æsthetical emotion. A vulgar error as to the nature of insanity has perhaps conduced to exaggeration as to the dangers of imagination. Visitors to asylums invariably arrive expecting to find growths of morbid invention and belief, wild, tangled, and luxuriant as a tropical forest, and leave much disappointed by the barrenness of the land, for the insane are the least imaginative of beings. At rare intervals a madman is encountered—a Blake or a Swedenborg—whom two intrepid doctors have certified, who dazzles all around him by the meteoric brilliancy of his conceptions; but, as a rule, the lunatic is as dull as a stone. He is the victim of a fixed idea, or his delusions pursue a treadmill round, or occur in groups so unvarying that, if you have ascertained one of them, you can predict all the rest. His mind is a blank or a blurred and unreadable page, or his fancies, if they come thick in the tumult of mania, are so disjointed or huddled together as to defy recognition. Idiocy is the absolute negation of imagination, and insanity undermines and destroys or enfeebles it more or less, and, when we try to drive out insanity, the first thing we do is to invoke imagination's aid, for moral treatment consists mainly in appeals to this faculty, and fully acknowledges its hygienic uses. The first recorded cure of melancholia was by the harp of David, and to-day in every lunatic hospital worth the name persistent efforts are being made by music, by pictures, by poetry and the drama to stimulate the imagination, and thus "cleanse the stuffed bosom of that perilous stuff that weighs upon the heart."

Imagination seems to have a trophic influence on the brain. When it is absent tardy growth goes on; when it is more or less in abeyance, weakness exists; when it is active, there is vigorous development; and the immediate effects of imagination in causing exhilaration and preventing sleep when it is excessively indulged almost suggest that the states of the cortex which accompany it have some control over metabolic changes in the body. We now know that, besides alkaloids exercising a poisonous effect, which owe their formation to microbes, and are called ptomaines, there are others which are produced by the cells of the living organism themselves in breaking down albuminous matter, and which are called leucomaines. Now Bouchard has shown that the alkaloids of the latter kind formed during sleep have a stimulating action, so that, when they accumulate to a certain amount, they excite the nerve centres and cause awakening, while those formed during waking hours have a depressing action and tend to induce sleep. And it is just possible that in the formation of leucomaines of different

classes, under varying conditions of the supreme nerve centres, a key may be found to the curious fact that certain emotional moods, after having persisted for a time, tend to induce their opposites—excitement, depression; appetite, disgust—and also to the influence of imagination, when very active, in causing exhilaration and wakefulness. It is just possible that under such circumstances it may arrest the formation of those leucomaines, usually manufactured during waking hours, which are depressing and lead up to sleep, or so modify decomposition that other leucomaines of a stimulating character are produced. There can be no question that, in insanity, certain states of the highest nerve centres are accompanied by rapid disintegration of the tissues and emaciation, while in other states of these centres metabolism is reduced to a minimum, so that prolonged starvation may be sustained with comparatively little wasting.

But it is only an inordinate indulgence of the imagination that produces excitement and interferes with natural slumber; its reasonable and regulated use causing only a certain buoyancy of spirits with which a sense of soothing is associated. Imagination, indeed, legitimately used, combines to some extent the pleasurable effects of both morphine and caffeine, without any disagreeable after-consequences, such as headaches, despondency, or confusion of thought. On the one hand, it may heighten happiness, and on the other afford solace in suffering and sorrow. It may give zest to appetite and allay the pangs of hunger, brace to exertion, or lessen the sense of fatigue. It would not be wrong to speak of it, when rightly used, as a true physiological stimulant, and analgesic, capable in some degree of taking the place of those crude agents drawn from herbs and trees, with which in all quarters of the globe mankind has sought to mitigate the dulness or assuage the pains of life. Moreover, its massive pleasures have a distinctly sedative effect in connection with those petty but exasperating animosities and jealousies that are the thorns of social intercourse, and fret and fray fine-textured brains. Lifting us above the turmoils and worries of the moment and opening up wide and distant prospects, they promote altruistic feeling, lull to rest our wounded sensibilities, and allay feverish excitement.

SENILE CHANGES IN ARTERIES.

In discussing the nature of constitutional susceptibility to disease in his recent address at Leeds, DR. JOSEPH COATS, of Glasgow, makes reference to senile changes in arteries in the following language:

"Turning to susceptibilities to disease, I believe that senile changes constitute a very important element in the commoner diseases of arteries. Atheroma of arteries and aneurysms, arising as these do for the most part from atheroma, are conditions in which we can distinctly trace the two elements in the causation which I alluded to at the outset of this address. These are diseases of middle life and old age, that is to say, senile changes in the arteries constitute the predisposing cause or susceptibility, but the determining cause is the impact of the blood on the wall of the artery. This is evident from the fact that atheroma is commonest where that impact is greatest,

namely in the aorta. It is not common in arteries of comparatively small calibre, but there are two situations in which it frequently occurs even in small vessels, and these are situations where the impact of the blood is apt to be greater than in other arteries of a similar size. The coronary arteries of the heart, coming off directly from the aorta, are exposed to a high blood-pressure, and they are very often atheromatous. The arteries of the brain also, coming off as the anterior and middle cerebral do from a large artery which passes up directly from the aorta, are presumably exposed to unusual blood-pressure, and they are very frequently affected with atheroma. Perhaps also the soft character of the brain substance, causing the arteries to be less supported than most others, may have to do with the frequency of atheroma here. In this disease, then, the changes of constitution in the arteries consequent on many years of activity induce a condition which renders the tissues of these vessels incapable of resisting, as before, the effects of the blood-pressure. This change of constitution we may infer to be a diminished vitality in the living structures forming the walls of the vessels. That it is so is almost demonstrated by the fact that atheroma is often associated with a condition of the middle coat, which implies greatly diminished vitality, namely, calcification of the muscle cells of that coat. Before a living structure allows of the deposition of lime salts in it, it is already so much reduced in vitality as to be almost dead.

Now it is interesting to observe that these senile changes in the constitution of arteries are subject to very great variations in different individuals, and in like manner the occurrence of atheroma varies, both in the age at which it occurs and in its extent. This is of great importance when we consider what an important part this disease plays in causing death in old people. A large proportion of the deaths in the latter part of middle life and in old age are from hæmorrhage or softening of the brain, presenting itself in the various forms of apoplexy, paralysis and brain weakness. These conditions of the brain mostly depend on atheroma of the arteries, and so we may say that the tendency to death is greatly influenced by the occurrence or the premature occurrence of the senile changes which render the arteries susceptible to atheroma. The constitutional condition of the arteries as regards vitality of their tissues in advanced life exercises thus a very important influence on the duration of life. I may venture to say that the constitutional powers of the heart and of the arteries are the principal factors in determining longevity. The ability of the heart varies greatly in different individuals, and survival when attacked by an acute disease will largely depend on the power of the heart to resist the debilitating influence of the morbid agent. If a man passes through middle life and has escaped from acute diseases, or has survived them, then the condition of his arteries is probably the most important factor in determining his chances of life. It is thus that the local constitutional peculiarities of the vascular system influence the duration of life. These constitutional conditions, like others, are largely the subject of inheritance, which thus again is seen to determine local peculiarities.

KIND TREATMENT FOR THE CURE OF DEMENTIA.

During the past week the American Social Science Association has been in session at Saratoga. A good common sense paper on "Training Insane Women in Domestic Industry" was read by General Secretary Sanborn, who prefaced his remarks by saying that in the general interest now aroused by industrial education he had thought the success of Miss Alice R. Cooke, of Sandwich, Mass., author of the above paper, in restoring to industrious habits insane persons who had become idle through loss of mental power and the lack of mental direction, would be of value, and this paper was the result. Miss Cooke said she took three women from asylums where they had been five years or more, all of Irish extraction, the youngest being about 30 years of age, and the oldest about 60. All were suffering from dementia, characterized by melancholia and delusions. Her treatment was simply kindness with thoughtful care, and her success in restoring them to constant usefulness in household service was made the basis of an argument showing the desirability of placing the chronic and quiet insane in private families rather than in the noise and confusion of public hospitals, where their disease is aggravated by the quarrels and violent outbreaks of different classes of patients. She thought what she had accomplished with these middle-aged women could be done still more effectively with the younger ones and those of more vigorous bodily health. This was followed by a general discussion relative to the training of defective classes in labor.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting, February 20, 1889.

CHARLES E. HAGNER, M.D., PRESIDENT,
IN THE CHAIR.

DR. I. BERMANN read a paper on

THE POSSIBILITY OF LATENT SYPHILIS CAUSING INFECTION.

(Discussion Concluded from page 355.)

DR. SMITH: All men and women who contract syphilis will lie about it. Unless Dr. Bermann could swear that this man did not contract the disease since his marriage and that this woman did not cohabit with anybody else, he could not help doubting infection from such a long latency. He then gave the history of a case where the woman told several stories and protested her innocence, and several years after she admitted that she had been indiscreet a number of times with several men. If Dr. Bermann could get the true history of his case he might find that there had been a little lying going on.

DR. THOMPSON: The question of infection through the semen is a very interesting one

Most syphilographers agree that infection must be through the foetus. Could this man, at this length of time since primary infection, infect his wife? He thought not. There were secondary manifestations, and not tertiary, after eleven years latency, according to Dr. Bermann's diagnosis. He questioned the correctness of the diagnosis. He had not proved syphilis. The man could not infect his wife from glandular enlargements. The diagnosis was false. He did not believe this man had syphilis. He had seen a young man to-day who had an eruption resembling the secondary manifestations of syphilis, with glandular enlargements; but there was no evidence of local lesions, and he declared that he had never had intercourse with a woman. Five years ago he had treated a man for the mildest form of syphilis; he afterward traveled and returned to perfect health. He came to him a few days ago with a suppurating gland, similar to a venereal bubo, and still he declares that he has not been exposed. According to the theory advanced to-night this man could infect his wife and children. Dr. Thompson did not believe that this young man could give his wife syphilis by copulation, or could infect his children through his wife.

DR. BERMAN: The cases cited by Dr. Thompson and his own are not at all alike, and, therefore, not comparable. Dr. Bermann was certain of his diagnosis. He could make as good a diagnosis as any one, and when he did diagnosticate syphilis he was as competent to do so as any one in this country or anywhere else. He had seen enough cases of syphilis to be sure of it when he made his diagnosis; and when he said a man had syphilis he felt sure it could be relied upon.

DR. THOMPSON: The cases were similar. Both had syphilis and were said to be well, but years afterwards developed symptoms resembling the secondary manifestations of syphilis. He was surprised at the wild statement of Dr. Bermann as to his powers of diagnosticating a disease surrounded by as many uncertainties as syphilis. He was surprised to hear a gentleman get up in a body of intelligent men and utter such an opinion. Dr. Thompson had visited the clinics of men with large experience in syphilitic diseases, and never heard one of them make such a rash statement. They are constantly changing their opinion. He had seen many cases in which they could not tell with certainty what the disease was due to, but suspected syphilis; but suspicions are not facts, and are not reliable in correct diagnosticating. If Dr. Bermann had not obtained the history in his cases he did not believe that he would have attempted to diagnosticate syphilis from such meagre manifestations. He had not proved that either of these patients had syphilis by one positive sign; until he did, then the diagnosis would be questionable. We all see ulcerations that resemble syphilitic ulcerations, but we

would not make a diagnosis from these alone at such a remote period after primary infection.

DR. BUSEY was seeking information. It had been definitely stated by Dr. Thompson that syphilis would not remain latent for so many years. The question is, did either of these patients have syphilis? The point seems to be settled that if the man had syphilis it did not remain latent so long, and if the woman had it the infection was more recent than claimed by Dr. Bermann. Assuming that the latency was not as long as it was said to be, the diagnosis is not positive. He did not believe the woman could have contracted the disease through the pregnancy and not have manifestations for so long a time. He coincided with the view expressed by Dr. Thompson, that if the woman had syphilis she contracted it long after the time stated in the report.

DR. BERMAN was very glad to hear Drs. Thompson and Busey testify to the absolute necessity of making an exact diagnosis, and felt very much relieved, consequently, as that absolved him from having been too arrogant in taking a firm stand regarding the exactness of a diagnosis he had made in a case fully as important as that of extra-uterine pregnancy, and much easier to make. A fair and scientific criticism of the subject brought before this Society for discussion can only be welcome to all members; but such objections as those made by disputing without giving any reasons, the correct diagnosis of a case they have never seen, and which had been under his observation for a long time, he could not consider either fair or scientific.

Zeiss says: Repeated observations, however, have taught us that persons affected with latent, feeble syphilis, though having no syphilitic effects on any part of their bodies, may communicate the disease to their wives, although it is not possible to discover any initial syphilitic lesion in the latter, and have not become pregnant. In these women syphilis manifests itself by extremely rapid emaciation. In the further course of the disease they lose their hair; sometimes periosteal swellings come on in some of the bones, and subsequently the menses become profuse and recur frequently. On becoming pregnant they will often abort. In what manner the syphilitic contagion in such cases has gained an entrance into the system is not yet clearly known. We know just as little in what manner a woman who suffers from latent syphilis is capable of communicating the disease to her husband. Possibly in such cases the blood has served to transmit the infection, some bleeding erosions or excoriations having occurred on the genital organs.

Neumann, to whom Dr. Thompson refers, says: Though it is not possible to draw the line absolutely between secondary and tertiary symptoms, still experience teaches that some forms of syphilis show soon after infection, that means in more

acute fashion, while others appear only several years after infection. The tertiary symptoms begin not before seven or eight months have elapsed. Not infrequently it can be observed that the so-called tertiary symptoms develop after the lapse of several years, without any secondary symptoms having been observed.

In regard to Dr. Thompson's statement about the use of mercury and iodine in such cases, a well known author states :

"Mercury as a rub is advantageous in proportion to the nearness of the symptoms for which it is given to the primary lesion, while iodine is nearly a specific for the later manifestations. The intermediary symptoms require both medicines combined.

"Syphilis may manifest itself as a mild eruption after chancre, disappearing possibly without treatment, and then, exceptionally it is true, lie latent for many years, as long as 52 years, to reappear with characters due only to syphilitic disease."

Bumstead and Taylor say: "It has been proved that the semen is not an infecting fluid, as are syphilitic blood and the excretions of specific lesions; moreover, every physician with experience has met with many instances of syphilitic men cohabiting for years with healthy women who never show any evidence of syphilis.

"The physiological secretions of syphilitic persons, the milk, saliva, urine, perspiration and tears, most probably are not vehicles of syphilitic poison. They may probably contain it, but in such an exceedingly dilute state as to be innocuous. However, one of the physiological secretions, the semen, seems to form an exception to this rule.

"Whether the semen of a man affected with latent syphilis may be the medium of contagion to the wife remains yet an open question. Von Barrensprung claims that this can be so only when the wife conceives. Others, as Porter and Langston Parker, have reported cases which tend to show that infection of the wife may take place without conception, solely through the direct action of the semen, and at the same time without the production on her part of any discoverable primary lesion. The difficulty experienced in ascertaining the real facts in such cases is materially increased from the fact that the primary lesion upon the internal genitals of the female is often very superficial, and lasts but a short time. H. Lee is of the opinion, however, that in these cases the semen does not cause the infection itself, but only through the admixture with it of syphilitic virus from the urethral mucous membrane.

"On the other hand, the virulence of the semen of a syphilitic father for a child he begets is an unquestionable fact."

The point that Dr. Smith made that people

with syphilis will lie even to their physicians is unquestionably true, but in his case the man's word could be relied on, as he had every reason to know and there was no reason for him to conceal any facts after he had acknowledged to having been treated for syphilis. The wife, when she came to him, had tertiary manifestations, as is sufficiently proved by the specific effects which iodide of potassium had in her case. If she had contracted the disease illegitimately, she would have been more likely to have come under observation long before it had come to the manifestation of tertiary symptoms. Furthermore, experience teaches, as Fournier in his works on Syphilis and Marriage shows, that the rule is that the wife is infected by the husband, and his authority, he thought, would not be questioned.

DR. THOMPSON said his one idea in all discussions was to consider matters brought before this society simply from a scientific standpoint, in order that a thorough, satisfactory, and at the same time impersonal discussion might be possible. He believed that the other members of the society would agree with him in saying that the extracts read by Dr. Bermann were admirably adapted to support the views expressed by him, and rather weakened than strengthened those of Dr. Bermann. He thought that no competent authority of the present believed that a woman could acquire syphilis by the semen unless through the foetus after impregnation. Fournier has inoculated with the semen of syphilitics without effect. The point which he would emphasize was that rather than believe that the patient had acquired syphilis from the semen of a syphilitic he would doubt Dr. Bermann's diagnosis. It is true that if an individual had a specific sore in the mouth the saliva which came in contact with it might infect another, and so could the semen passing over a sore in the urethra; but saliva and semen as such did not and could not infect. Further, while secondary syphilitic lesions were inoculable, tertiary were not.

In regard to the diagnosis of the primary lesion, if Dr. Bermann meant that some syphilitic sores were so characteristic that no one could possibly make a mistake, he agreed with him; but the true Hunterian chancre does not represent one-half the infecting sores. Sometimes these are so slight that the patient would not discover their existence, and this has repeatedly occurred, even in the person of physicians. Many slight erosions or abrasions may occur which are not the least characteristic, and which readily disappear upon simple treatment. But, nevertheless, it is possible for even these to infect with syphilis, or a person may become infected through them. There are no hard and fast lines to be drawn between the appearances of the chancre and chancroid—the infecting and non-infecting sore. Characteristic examples of each are met with, but again other

sores occur which it is impossible to refer definitely to either category simply from their naked-eye appearances. The woman in Dr. Bermann's case was exposed constantly throughout her married life to infection from her husband, but who could tell when it occurred? If syphilis were present inoculation must have occurred in this way; for supposing that even the sore in the man's mouth was a gumma, infection from it was not possible. Dr. Bermann had said that it was possible to differentiate in ulcers of the throat between specific and non-specific. This was always difficult. At the present time he had under observation, in an elderly maiden lady—where the existence of syphilis was out of the question—a leg ulcer which had all the appearances of being specific, but which was healing rapidly under the simplest general and local treatment.

DR. BUSEY expressed his surprise that Dr. Bermann should have believed that he had made an attack upon him.

DR. BERMAN had referred to Baumbler's opinions in regard to the subject in hand which on being rehearsed seemed to support the stand taken by Dr. Thompson.

DR. BUSEY asked if Dr. Bermann now said that he did not know when the woman was infected with syphilis why he had presented the case as one of latent syphilis of long standing?

DR. BERMAN reiterated his belief that his case was one of infection by latent syphilis.

Stated Meeting, February 27, 1889.

DR. HAGNER IN THE CHAIR.

DR. D. S. LAMB presented

SPECIMEN OF TUBERCULAR PERITONITIS.

Uterus and appendages and left lung. Peritoneum covering uterus and appendages was everywhere studded with small flat tubercles about 2 lines in diameter. The lung was compressed so that there was no air in it. Specimens from a colored woman who had had fever, night-sweats, brown tongue, cough, brownish expectoration, emaciation; diarrhoea and constipation alternated; tympanites; severe abdominal pain, especially in epigastric, umbilical and right iliac regions. The post-mortem examination showed the peritoneum everywhere as in the specimen; the parenchyma of the organs, the mucous membrane of the intestines, and the lymphatics of the abdomen not affected. Right lung oedematous; left lung as described; was compressed by a large serous effusion in pleura; pleura of lung thickened. Abdominal organs adherent everywhere; some adhesions slight; others, especially in the right iliac region, old and firm. Liver small and fatty; spleen small. Kidneys normal. Brain and heart normal.

Also, a specimen of extra-uterine pregnancy.

The mother, a colored woman, age 27, had been married one year when she began to show signs of pregnancy in October, 1888. After a time she had colicky pains, and towards January, 1889, had, at short intervals, some hæmorrhage per vaginam; a tumor also appeared in right ilio-lumbar region. In January the hæmorrhages were more profuse and frequent. She died suddenly February 20th. The post-mortem examination showed the right Fallopian tube converted into a large sac, with placental wall ruptured at one end, where a four-months' foetus had escaped; left tube much distended with watery fluid; small corpus luteum in *left* ovary; some old adhesions around right tube and to omentum. Lungs normal; slight thickening on one aortic segment. Abdominal organs normal, except as mentioned. Abdomen full of blood-clots and serum.

DR. BUSEY was extremely interested in these cases, and in the extra-uterine pregnancy he was desirous to obtain a correct record of knowing if he had understood Dr. Lamb to say that the patient had had symptoms in the second, third, and again in the fourth month.

DR. LAMB remarked that there had been pain in each of the three months, and the discharge spoken of had occurred one month before death.

DR. BUSEY thought that the patient had not been examined carefully, and that in all probability operative interference at the right time might have saved her life. Referring to the case reported sometime since to the Washington Obstetrical and Gynecological Society, by Dr. Smith, he observed that the case had only been seen after death by Dr. Smith, but the symptoms seemed by him to have been sufficiently pronounced to have excited the suspicion of her attending physician. Here then were two specimens, presented within a short time of each other, removed post-mortem from patients who had died of a ruptured extra-fœtation sac, and in both cases it was fair to suppose that if the diagnosis had been made, and abdominal section performed, a fatal termination might have been averted.

DR. SMITH asked Dr. Busey if he had ever seen a case of ectopic pregnancy. He reviewed the history of the case alluded to by Dr. Busey, which had previously been reported by him. The patient was pregnant three months, but there had been no symptom pointing distinctly to the existence of an extra-uterine fœtation before those presented themselves which immediately preceded and accompanied the fatal issue. Four days before her death the patient sent for Dr. Smith, and she then complained of intense abdominal pain, most marked in the epigastric region. The temperature and pulse were normal but there was some vomiting. The next day the symptoms were the same, but were somewhat mitigated by the treat-

ment pursued. On the evening of the fourth day he saw her again and left her comfortable. There was no pain or tenderness in or over the abdomen, nor any symptoms of hæmorrhage or shock. At his next visit he found the woman dead. Throughout the whole history of the case there was nothing to indicate the existence of an anomalous pregnancy. The only thing which produced disturbance was some frequency and painfulness in micturition. At midnight, a few hours after Dr. Smith's visit, she awoke her sister—who was sleeping with her—and told her she was dying. She was anxious to have her feet elevated. Dr. Holden, who lives in the neighborhood, was hastily summoned, and reached her about half-past one. He gave her stimulants hypodermatically, but without avail, as she soon died.

Dr. Smith, continuing, said that Dr. Busey was of the opinion that the diagnosis should have been made in this case, and in that reported by Dr. Lamb, but the inherent difficulties of the diagnosis in this condition should not be forgotten. At a recent society meeting in Philadelphia Dr. Parvin had said that, after all, the diagnosis in such cases of ectopic pregnancy was a happy guess. Many others, whose names are familiar to us as active and intelligent gynecologists, had participated in this discussion, but the general consensus of opinion was that the whole question of diagnosis was beset with the utmost difficulties. Indeed, even after operation, it is not always easy to decide that an ectopic pregnancy really existed; and in one case, to which attention was called, in New York, the specimen had first to be submitted to a microscopist before this decision could be arrived at.

So far as the history of ectopic pregnancy in this city was concerned, there were eight or ten specimens in the Army Medical Museum, all of which had been removed after death.

In any woman where the menses have ceased and the uterus on examination proves to be enlarged, the inference is that normal pregnancy exists. In his own case the uterus was of the size to correspond with the existing term of uterogestation. This being ascertained, there having been nothing to point to the existence of anything abnormal, the examination was concluded.

The symptoms of ectopic pregnancy are really those of pregnancy plus abortion; and if an examination is made and no abortion is found to be taking place then the suspicion of extra-uterine pregnancy is at once excited. Suppose, under these conditions, a tumor is found at the side or behind the uterus, are we justified in performing abdominal section and removing it? Dr. Smith thought that we were, and would go farther and say that anything less than such a procedure was an injustice to the patient. It would be more excusable to fail to make a diagnosis than having made it fail to remove the abnormally-seated product of conception.

DR. BUSEY remarked that, having trusted to his memory when first speaking of Dr. Smith's case, he had made an error in believing that Dr. Smith did not see his patient until the time immediately preceding or coincident with the fatal termination. It now transpires that he saw her four days before this and, without desiring to cast any blame upon Dr. Smith, he thought most assuredly the diagnosis should have been made. Even although he could not have made the diagnosis completely and accurately he should have discovered the tumor. He differs again with Dr. Smith as to the unvarying employment of laparotomy even if the diagnosis is assured, for even as great an authority as Thomas conceives laparotomy to be the last, not the first resort. He believed that laparotomy may be but is not invariably best. Yet, in either of these cases laparotomy would not only have been justified, but was imperative, when symptoms of impending dissolution appeared. At the time of rupture abdominal section was imperative, but not always before this.

DR. SMITH asked Dr. Busey if not laparotomy, then what other method of treatment was indicated before rupture?

DR. BUSEY: Electricity is the alternative.

DR. J. FORD THOMPSON referred to the importance of the subject under discussion and urged its exhaustive study and thorough elaboration. His own opinions were not in perfect consonance with those of Dr. Smith or those of Dr. Busey. He thought that in the vast majority of cases of ectopic pregnancy the diagnosis ought to be made. When the surgeon is called upon to decide the nature of an abdominal or pelvic tumor coexisting with pregnancy, and in connection with the symptoms which have already been alluded to, he must confess that there is little ground for confusion. He was anxious that not too much weight be placed upon the opinion of accepted authorities, for upon these matters any one of surgical experience is entitled to entertain and express his individual opinion.

He was in accord with Dr. Busey as to the limits he puts upon abdominal section. Tait has reported forty-two cases of abdominal section for ruptured ectopic fetal sacs with but two deaths; and if such a result can be achieved at such a time, and under such unfavorable conditions of shock, etc., why not earlier? If early laparotomy is not performed the surgeon may never have the opportunity of operating at the time of rupture, for death may ensue before he reaches her bedside. It is the bounden duty of the surgeon to first make his diagnosis and then perform laparotomy. He regarded the sound as a valuable aid in diagnosis, although its use was deprecated by some. He considered electricity, or any other means of killing the fetus, as inferior to laparotomy. Such a procedure does not save the woman; even though it averts immediate danger many accidents may sub-

sequently ensue, such as breaking down of the sac, and all the evils attending and following this process.

Laparotomy is best performed early, for then the operation is easy, no adhesions or other complications existing. He expressed himself as opposed to any method of killing the foetus provided it was allowed to remain within the abdominal cavity.

DR. G. W. JOHNSTON observed that it gave him great pleasure to listen to the preceding discussion of the subject of ectopic pregnancy, and he was glad that a matter so important was called so forcibly to the attention of the Society as had been done by the presentation of the specimen from one fatal case, and the narration of the history of another. Tait's views as to the nature and mode of origin of ectopic pregnancy were well known and needed no comment; and Dr. Lamb's specimen, in which there was tubal gestation on one side and grave disease on the other, would aid in the support of Tait's opinion as to the etiology of the condition. Dr. Johnston hoped that the tube which was diseased would be submitted to careful microscopic examination in order to ascertain the character of its lining mucous membrane, particularly with reference to the absence or presence of cilia upon its epithelial investment.

So far as the difficulty of the diagnosis before rupture was concerned, he believed that this was universally acknowledged, and while we all agreed that a diagnosis should be made it was not always easy to make it. The classical symptoms of this condition at this time were quite distinctive, but from a study of those cases where the diagnosis previously attempted or made had been confirmed by abdominal section during life or autopsy, he was convinced that many of the distinctive symptoms might be wanting although, in a certain proportion, so characteristic was the picture presented that it was hardly possible to see how one could have gone astray. While it appears, therefore, that in some cases of extra-uterine foetation, before rupture, many significant features of the affection may be absent, so that we are, as Tait puts it, rather confused than enlightened by the history of the case; on the other hand it is equally worthy of remark that certain other affections of the pelvic contents may be accompanied by symptoms, both subjective and objective, so like those which are said to accompany extra-uterine foetation that it is with surprise, on opening the abdomen, that the operator finds that it is not with an ectopic pregnancy, but with something entirely different, that he has to do.

In spite of the manifest difficulties which surround this subject we will all agree that nothing exceeds or, perhaps, even equals it in importance. It is a subject which is of the most vital importance, not only to the specialist, but the general

practitioner, and its importance has been immeasurably enhanced by the wonderful record of Tait's operations at the time of rupture, which are set forth in his work on "Ectopic Pregnancy," recently published.

America has just cause to be proud, however, not only for the work which her physicians have done in the development of electricity in the treatment of this condition, but more especially because two of its members have proven conclusively, by three cases, that the diagnosis could be made and the sac and its contents be successfully removed before rupture had taken place. To Dr. Joseph Price, of Philadelphia, who reported the first case, and to Dr. J. S. Hawley, of New York, who operated upon the others, too much credit cannot be given for this solution of a very difficult problem.

It would appear from the remarks just made in discussion that the use of electricity was attended by no danger. That this was not the invariable rule Dr. Janvrin's case (heretofore reported) proved very conclusively.

DR. SMITH desired to make some further remarks in regard to his own case. The day before his patient had been seized with the illness which proved to be her last, she had been actively engaged in washing clothes and hanging them on the line. She had, at the conclusion of this work, gone out to a neighboring store to make some needful purchases, and on her return attempted to castigate one of her children, a large boy. It is likely, therefore, that the rupture of the sac was immediately the consequence of her own indiscretion. He had previously treated this patient for retroversion of the uterus, and when he had first been called after her sudden attack he supposed that the gravid uterus, which he previously replaced, had again become dislocated. Examination showed the uterus to be occupying its normal position, and he presumed that it had fallen backward, but had subsequently spontaneously assumed its normal position.

Beside this there was a fibroid in the uterus, and the discovery of this body in the womb of a woman with signs of pregnancy served still further to complicate the diagnosis. He was thoroughly in accord with Greig Smith, who regarded laparotomy as imperative as soon as the diagnosis was made. He was opposed to the use of electricity, as after the foetus had been killed the woman was by no means free from danger. He referred to a case in which Dr. Mann, of Buffalo, had supposed that he had killed an ectopic foetus by electricity, while Dr. Kelly, of Philadelphia, who subsequently operated upon the patient, proved the supposed ectopic gestation sac to be an ovarian tumor. He quoted Dr. Formad, of Philadelphia, as saying that the majority of cases of extra-uterine pregnancy were diagnosed by the coroner. He referred also, in speaking of

the use of electricity, to the opinion of Reeve, expressed in the words: "One should never employ electricity in this condition unless his laparotomy instruments were at hand."

DR. FORD THOMPSON observed, in speaking of the usefulness of the sound for purposes of diagnosis, that when all other means of diagnosis had been exhausted, and the symptoms pointed to the existence of ectopic pregnancy, the introduction of the sound was perfectly justifiable, and in Dr. Smith's case this procedure might have led to the making of a correct diagnosis, and the saving of the patient's life.

DR. BUSEY asked if Dr. A. W. Johnstone, of Kentucky, had not been the first to remove an ectopic foetation sac before rupture?

DR. G. W. JOHNSTON replied that Dr. Joseph Price was the first to put such a case on record. The history of his case was very brief, and perhaps might be called incomplete. The second and third operations had been performed, as had been said, by Dr. Hawley, of New York, and the description given left nothing to be desired. Dr. Price's case appeared in the *Annals of Gynecology* and Dr. Hawley's in the *N. Y. Medical Journal*.

DR. BUSEY was convinced that in every case of ectopic pregnancy the diagnosis should be made. Heretofore, in speaking of ectopic pregnancy, he had had in mind only the tubal variety. To make his views upon treatment clear he would say that: 1. When rupture has occurred laparotomy is the sole and imperative operation; and 2. When an assured diagnosis has been arrived at previous to rupture, laparotomy is again the operation of election; but in that large group of cases where the existence of ectopic pregnancy is probable, but where an accurate diagnosis is impossible, electricity is preferable to laparotomy. While it is true that bad results have attended and followed its application in some instances, this was by no means most frequently the case; and the vast majority of instances nothing untoward had occurred, and success had followed its application.

DR. LAMB said that in his case a *corpus luteum* was noticed in the left ovary, while the pregnancy was in the right tube. He asked if any explanation could be offered for this state of things?

DR. G. W. JOHNSTON remarked that the introduction of a sound into the uterus for diagnostic purposes was by no means devoid of risk; the contraction of the uterus, and of the foetal sac, might thereby be induced, and fatal rupture was known to have occurred. In reply to a question of Dr. Thompson's, he said that he was not prepared to state definitely where he had seen such an assertion, but would endeavor to give him the desired information.

DR. S. S. ADAMS reported a case of
FRACTURE OF SKULL AND LACERATION OF BRAIN.
B. F. C., white, N.Y., consulted me in August,

1887, for epilepsy, inherited from father. Full habit and addicted to use of alcoholic liquors. A seizure preceding night. Two or three slight paroxysms since. Feb. 22, 1889, was thrown from a carriage and sustained a number of contusions. Was confined to house till Feb. 26th, then returned to work in land office; at noon, while ascending inside stairs on north front, he fell backward. Was attended by Drs. Darby and Littleford. Dr. J. Ford Thompson called at once, and sewed scalp wound on right frontal eminence. I met Dr. T. at 5 P.M., when he made an exploratory incision on the right temporal region. Fracture detected, but no depression. Prognosis: Death would take place in a few hours, as it was believed that the brain had been lacerated. Active convulsions from time of accident till 7 P.M., after that profound coma until death, at midnight, 26th.

Necroscopy, by Dr. D. S. Lamb, twelve hours after death, limited to the head: There was a large swelling in the right temporal region, due to hæmorrhage into and under the scalp. In this swollen part an angular incision had been made above and in front of the line of the ear. On the right side of the forehead was a lacerated wound of the skin corresponding to the frontal eminence, beneath which the bone was normal.

The right parietal bone was fissured longitudinally, the fissure crossed the coronal suture at the right temporal ridge and took an angular course to the left for a short distance over the frontal bone; posteriorly the fissure approached the occipital apex within 2 inches, and bifurcated into two branches, one extending downwards to the occipito-parietal suture, the other to the left, across the median line and a short distance beyond.

The brain was covered with dark blood-clots everywhere; there was a longitudinal laceration involving the lower part of the frontal and parietal lobes, and communicating with the surface in line of the lower end of the fissure of Rolando. The fractured bone showed many extravasations in the diploe.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

London Hospitals and their Management—The Metropolitan Water Companies' Filter Beds—Spirene in the Treatment of Consumption—The use of Poison for Criminal Purposes in India—The Death-rate of London—Miscellaneous Topics.

The Government has pledged itself to take into consideration the whole question of the London hospitals and their management. Lord Sandhurst

in a speech showed that ample room exists for searching inquiry. It is undoubtedly the case that the multiplication of "special" hospitals during recent years has seriously diminished the incomes of the older institutions. This is a grave matter in itself, but it becomes graver still if it be true that the "special" hospitals are prone to extravagance. Sir Andrew Clarke's fancy sketch of the "Hospital for the Treatment of the Diseases of the Great Toe" has a good deal of truth at the back of its irony. It is not easy to see what the Government can do to stop this state of things, but even the knowledge that it hopes to do something may produce a beneficial effect for a time.

Major General Scott, the official water examiner, in his forthcoming report gives a favorable account of the condition and working of the Metropolitan Water Companies' filter beds. A normal limit to the rapidity of filtration has now been adopted, being at the rate of $2\frac{1}{2}$ gallons through each square foot of the filtering surface, which consists of layers of sand and fine and coarse gravel. The local companies' filtration during last year appears to have been well within this limit. Sand is the efficient medium. Turbid water, however, after floods is difficult to deal with. The solid impurities in suspension chiefly consisting of clay, marl, and chalk in very finely divided state, can be got rid of only by long subsidence previous to filtration. Turbid water must of necessity be sometimes admitted, and filters are then overtaxed. Great stress is laid in the report upon the necessity of having cisterns properly covered so as to exclude both light and dirt, and they should be so placed that the water may be kept cool in summer without being in danger of freezing in the winter.

Spirone is the name given to a fluid which is claimed to be of great use in the treatment of consumption and a variety of pulmonary affections. It is also stated to be very efficacious in coryza. The quantity used is $\frac{1}{2}$ oz. during the twenty-four hours, and this is best taken by inhaling about one-fourth of the total quantity for the twenty-four hours, as soon as the patient awakes or immediately after getting up. Another fourth should be taken before going to bed, and the remaining half should be used at intervals in dribbets during the day, especially if at any time there be a feeling of dryness, itching or tingling. The spray should be applied by blowing it somewhat vigorously against the back of the throat, making the jet strike successively the different parts of that region, the patient drawing it into the lungs at the same time. Two whiffs in succession should be given up each nostril, the head being thrown well back, and kept in that position, so that the spirone can trickle down the back of the throat. The first whiff is often very painful, especially for the first few days; the second is less so—the sensitiveness diminishing rapidly as the condition

of the mucous membrane improves. If two inhalations up each nostril are sufficient to produce entire relief they had better not be repeated during the day. If, however, at any time the nostrils, back of the nose or throat again appear irritated or uncomfortable, the application may be repeated. It is found, however, well not to use it for the nostrils more than four times altogether during the twenty-four hours, and the spray must not be delivered too forcibly, as in hay fever the mucous membrane of the nostril may easily be made to bleed, owing to its state of irritability and congestion. In hay fever the treatment should begin a few days before the expected attack. Even if the remission of the symptoms is complete, the treatment must not be left off, or even decreased for a week or ten days after the expiration of the period during which the disease generally lasts.

Some interesting reports are to hand relative to the employment of poison in India for criminal and other purposes during the year 1888. It would seem that the total number of such cases dealt with in the Government of Bombay for the twelve months was 360, while there were only 282 the preceding year. This enormous increase is accounted for partly from the fact that the use of poison for criminal purposes is becoming increasingly frequent each year. Vegetable poisons, which were most extensively used a few years ago, have been rapidly giving place to metallic poisons. This is ascribed by Dr. Lyon, the analyst to the Government, to the ease with which drugs such as arsenic are procurable at the present time, there being practically no restriction on their sale. Out of eighty-four undeniable cases of human poisoning, arsenic was employed in forty-one, copper in six, mercury in five, powdered glass in three, and red lead in three, while of the remaining twenty-seven cases opium appears to have been used in fifteen, datura in five, alcohol in two, prussic acid in one, and oleander and other plants in four. According to Dr. Lyon poisoning by means of powdered glass is, comparatively speaking, quite a recent innovation, and hence the number of cases which had come under his notice was smaller, probably, than it otherwise would have been. The return points irresistibly to the conclusion that deaths from criminal administration of metallic poison are not only common, but are in fact of increasing frequency in India at the present day.

Among the large towns of the United Kingdom, London during the past month, with a death-rate of 18.6, holds an honorable place in the latest returns of the public health. It is far behind Huddersfield, which reports only 10.7, and Derby, 12.2; but these are both very exceptional returns. Next in order comes Brighton, 14.6, and Bristol, 16.4. Absolutely the most unhealthy large town is Preston, with a death-rate

of 48.6. In the metropolis the most serious zymotic disease at present is diphtheria, from which there were forty-four deaths. Scarlet fever is prevalent, but the epidemic is of a mild form.

Dr. Norman Kerr, who was first drawn to the study of inebriety as a disease while working as a temperance reformer, points out that certain periods of life are accompanied by a special craving for stimulants, which disappears along with the physiological circumstances that caused the disturbance of the system. The habit of drunkenness, he asserts, may also result from some accident—may, indeed, be a symptom of some obscure brain disease.

Aix-les-Bains is grateful to British medical men for their appreciation of its mineral waters, and the municipality has recently determined to honor the profession in the person of a distinguished London physician, by giving to a new avenue the name of Sir Alfred Garrod.

In view of the excessive prevalence of infant mortality a select committee has recommended that the Friendly Societies Act should be so altered that the age for the insurance of juveniles be extended from 10 to 16 years, but that the total amount of insurance be absolutely limited, and for the security of infantile life suggests that the Registrar-General should add to the form of medical certificate of death a column demanding particulars of insurance on the life of deceased, to be filled up by the doctor in attendance on the family.

MISCELLANY.

AMERICAN ACADEMY OF MEDICINE.—The Annual Meeting of the Academy, for 1889, will be held at Chicago, Ill., November 13th and 14th, being postponed to that date by authority of the Council.

RICHARD J. DUNGLISON, Secretary.
Philadelphia, Sept. 1, 1889.

LETTERS RECEIVED.

Dr. S. O. Bowen, Eastford, Conn.; B. Westermann & Co., New York; Dr. Jno. G. Ames, Marblehead, Mass.; Dr. W. H. Ashley, Shelburne Falls, Mass.; Dr. J. A. Hinton, Friendship, Tenn.; Shelby Morgan, Shelby, Ind.; Dr. John S. Marshall, Green Spring, O.; Dr. Samuel A. Fisk, Denver, Col.; Dr. John B. Hamilton, Surgeon-General U. S. M. H., Washington; Dr. Herbert H. Judd, Galesburg, Ill.; Dr. J. G. Carpenter, Stanford, Ky.; Dr. H. R. Storer, Newport, R. I.; Dr. J. B. Lawrence, New York; E. J. Hirsh, Ann Arbor, Mich.; Dr. Hubert S. Johnson, Lowell, Mass.; Dr. C. S. Pixley, Elkhart, Ind.; Dr. Wm. C. Banc, Cannonsburg, Pa.; Dr. D. Mason, Spokane Falls, Wash. Ter.; Dr. F. Terrier, Paris, France, Surgeon-Major Chas. D. Greenleaf, Washington; Dr. Mary Green, Charlotte, Mich.; Dr. C. T. Kemmurer, Eldridge, Ia.; E. Steiger & Co., New York; Hon. W. P. Sheffield, Newport, R. I.; National Surgical Institute, Indianapolis, Ind.; Dr. Wm. Perrin Nicholson, Atlanta, Ga.; W. M. Thayer & Co., Chicago; Geo. S. Davis, De-

troit, Mich.; Dr. J. G. Carpenter, Stanford, Ky.; Dodd's Advertising Agency, Boston, Mass.; Dr. T. A. Marchand, Cincinnati, O.; Dr. A. N. Bell, Brooklyn, N. Y.; W. P. Cleary, New York; Medical College of Ohio, Cincinnati, O.; Dr. P. O. Hooper, Little Rock, Ark.; Dr. S. Solis-Cohen, Philadelphia, Pa.; J. H. Bates, New York; Longmans, Green & Co., New York; Fred. D. Van Horen, New York; Dr. W. E. Casselberry, Chicago; Dr. C. O. Cooley, Madelia, Minn.; Dr. G. B. Dunmire, Philadelphia.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from August 31, 1889, to September 6, 1889.

By direction of the Secretary of War, a board of medical officers, to consist of Col. Edward P. Vollum, Surgeon; Major Henry McElderry, Surgeon; Major Washington Matthews, Surgeon; Capt. James C. Merrill, Asst. Surgeon, is constituted to meet in New York City on the 1st day of October, 1889, or as soon thereafter as practicable, for the examination of Asst. Surgeons for promotion and of candidates for admission into the medical corps of the Army. The board will be governed in its proceedings by such instructions as it may receive from the Surgeon-General. Par. 1, S. O. 203, A. G. O., September 2, 1889.

Major P. J. A. Cleary, Surgeon U. S. Army, is hereby granted leave of absence for two months on surgeon's certificate of disability. S. O. 59, Hdqrs. Div. of the Pacific, San Francisco, Cal., August 27, 1889.

Capt. Joseph Y. Porter, Asst. Surgeon, resignation has been accepted by the President, to take effect August 29, 1889. Par. 11, S. O. 200, Hdqrs. of the Army, A. G. O., August 29, 1889.

Capt. Charles B. Ewing, Asst. Surgeon, granted leave of absence for twenty-one days, to commence on or about September 21, 1889, provided that at that time the post surgeon, now on leave, has returned to duty. Par. 5, S. O. 201, Hdqrs. Div. of the Atlantic, Governor's Island, N. Y., September 4, 1889.

First Lieut. W. B. Banister, Asst. Surgeon, granted leave of absence for fifteen days. Par. 2, S. O. 82, Hdqrs. Dept. of Ariz., Los Angeles, Cal., August 23, 1889.

The garrisons of Ft. Laramie, W. T., Ft. Hays, Kan., and Ft. Lyon, Col., will be withdrawn and the posts named will be abandoned as soon as it can be done with due regard to economy. By G. O. 69, A. G. O., August 31, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending September 7, 1889.

P. A. Surgeon F. S. Nash, detached from the "Dale" and ordered to duty in the Bureau of Medicine and Surgery.

P. A. Surgeon A. C. H. Russell, ordered to naval hospital, Yokohama, per steamer of September 28.

P. A. Surgeon C. H. H. Hall, detached from naval hospital, Yokohama, on reporting of relief, and return home.

Asst Surgeon S. S. White, detached from naval hospital, New York, and ordered to the "Minnesota."

Asst. Surgeon E. P. Stone, detached from the "Minnesota," and wait orders.

Asst. Surgeon P. H. Bryant, detached from the "Ajax," and ordered to naval hospital, Norfolk, Va.

Asst. Surgeon A. R. Wentworth, detached from naval hospital, Norfolk, Va., and wait orders.

CORRIGENDUM.

In the address of the Hon. Wm. P. Sheffield, appearing in THE JOURNAL of August 24, the closing sentence of the third paragraph, second column, page 253, should read: "He came while the court was in session, and after the trial and sentence of Mrs. Hutchinson."

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NO. 12.

ORIGINAL ARTICLES.

NASAL BACTERIA IN HEALTH.

Read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY JONATHAN WRIGHT, M.D.,
OF BROOKLYN, N. Y.

The position which microorganisms will ultimately take in their relation to the morbid processes of disease has not been determined as yet. Indeed, we seem now only at the beginning of an unknown region in which, possibly, lies hidden the mystery of the etiology of many pathological changes. Encouragement in the region of preventive medicine, under which head we must include all that Listerism has done for surgery, lends zest to the attempts to follow the microbe into the human organism and there annihilate. The almost complete failure thus far has given professional cynics an opportunity for a somewhat galling criticism. These failures are, no doubt, in a large measure due to our as yet very incomplete knowledge of the varying conditions and influences which complicate the relations of microbes to the human organism. Whatever opinion the clinician may have of the part played by them in the etiology of the diseases he observes, even the most skeptical must admit that the burden of disproof must have been thrown upon the doubters.

With the increased probability that many pulmonary and nasal diseases owe their origin, in a large degree, to microorganisms, it becomes important that the bacterial contents of the respiratory tract, in a state of health, should be known. Before we are in a position to investigate a pathological process, we must have a firm physiological basis on which to stand. Before we seek for a pathogenic microorganism in disease we should know what exists in the situation in a condition of health. The *ingress* of all iufective agents must, in the vast majority of cases, be through the nose or the mouth; those of the respiratory tract, as a rule, through the former; those of the alimentary tract, as a rule, through the latter. The bacterial contents of the mouth, in health, have been so thoroughly investigated by Biondi,¹ Vignal,² Netter,³ Fraenkel⁴ and others,

that further researches would seem superfluous when our knowledge of the nasal microorganisms in health is so slight. As laryngologists we are becoming more and more impressed with the necessity of normal nasal respiration and the harm of mouth breathing. In the further advance of nasal bacteriology we may find another reason to urge the importance of purely nasal respiration. When we remember the apparatus of Hesse⁵ for air analysis, the configuration of the internal nose would seem admirably adapted to arrest the progress of microbes carried into it by the air current; and still further, it has been conclusively proved that bacteria never rise from a damp surface, however strong the blast may be over it, unless carried along by some particle of water, or mucus, or solid matter. Hence we should expect to find innumerable varieties of bacterial forms derived from the air, and might well despair of reaching any definite conclusions in the matter. Besides the bacteria of phthisis and pneumonia and the microbe of diphtheria, whether it be the bacillus of Löffler or the streptococcus of Prudden, there seems good evidence that some purely intra-nasal diseases depend upon microorganisms for their origin or their subsequent course. A perusal of the researches of Löwenberg,⁶ Klammann,⁷ Thost,⁸ Seifert,⁹ Strauch,¹⁰ Valentin,¹¹ Hajek,¹² Reimann,¹³ and others into the etiology of ozæna and coryza must convince us of the truth of what Walb¹⁴ says of ozæna. "I am convinced," he says, "that the way opened by Löwenberg will lead to the discovery of the nature of ozæna. Whether the Löwenberg coccus or some other is the cause of ozæna is of no consequence; it must exist and it is to be hoped that it will be found."

Whether there is a bacterial connection between coryza and pneumonia as claimed by Thost⁸ and further urged by Cardone,¹⁵ it is impossible, with our present knowledge, to form any opinion. Notwithstanding the abundance of literature to be found on the bacteria of nasal diseases, there is very little, in fact no, systematic examination of the normal nasal secretions for bacteria recorded in the somewhat extended range of literature to which I have had access. However instructive the staining of nasal secretions for bacilli and cocci, as a matter of technique, may be, there is

little or nothing else to be learned from it without the aid of the improved methods of culture tests. I have therefore omitted extended reference to this class of work. The mere presence of microorganisms in nasal secretions was established many years ago. Bernard Fraenkel, in Ziemssen's *Encyclopædia*, in 1876, in his article on "Acute Coryza," says: "A large number of these little structures recently so much spoken of and called micrococci, may generally be seen also covering the cells." And he refers to Hueter¹⁶ as claiming these bodies to be the source of irritation in coryza. Herzog¹⁷ in 1881 found many bacilli and cocci in normal and abnormal nasal secretions, more abundant in the latter, and especially in foetid nasal catarrh. Eugen Fraenkel,¹⁸ on the other hand, in 1882, stated that he could find no bacteria in the normal nose, and his work on *Ozæna*, in the secretions of which he found four kinds of bacteria, has been widely quoted, but in the light of our present bacterial knowledge it possesses on this point only historical interest. Later observations have all been made incidentally in connection with bacterial investigations of disease. Bernard Fraenkel,¹⁹ in 1886, found in the normal pharynx, besides the staphylococci *pyogenes aureus* and *albus*, a micrococcus which often appeared as a diplococcus, and did not fluidify gelatine. Probably the same coccus was found in the normal retro-pharynx by Hack,²⁰ and fully described by his pupil, Strauch.²⁰ The latter asserts that it is also found in the nose, but less frequently and in fewer numbers. Both Löwenberg⁶ and Hajek¹² failed to find microorganisms at all constant or abundant in normal nasal secretions. Reimann,¹³ on the other hand, described two forms as nearly always found; one a plump round ended bacillus, and the other a little coccus which occurred usually in pairs but often in longer chains. Considering the extensive and very thorough work done upon the bacterial contents of the mouth in health, it is singular that there should be such a lack of it in the nose.*

My own observations were made during the last two years in the laboratory of the Alumni Association of the College of Physicians and Surgeons, under the direction of Dr. T. M. Prudden, to whose kindness and careful oversight the little which may be of value in them is due. The material was drawn from the Dispensary of the Roosevelt Hospital. Although a number of other cases were examined, it is my purpose to record here only those investigations made in fairly normal cases, leaving the examinations in the other

cases for further amplification and another occasion. The method of work was as follows: Portions of the nasal secretion were removed from the mucous membrane covering the turbinated bones and adjacent portions of the septum, in the loop of a long platinum needle previously sterilized in the flame. This was immediately plunged into two gelatine tubes and streak cultures were made upon two agar-agar plates. Thus four inoculations were made from different portions of the nasal chambers in each case. Besides this a number of dry cover-glass preparations were made of the nasal secretion in each case, and stained by Gram's method and by simple double staining. These last frequently showed no bacteria when the culture-tests proved their presence in great abundance. The gelatine tubes were plated according to Koch's method, and pure cultures obtained and transferred to culture media tubes of agar-agar, 5 per cent. glycerine-agar, gelatine, bouillon, milk and potatoes. The same was done with pure cultures obtained from the streak cultures on the agar-plates. The growth characteristics were noted and compared with description in the works of Flügge, Fraenkel, Eisenberg, and others, and where close correspondence was observed their denominations were accepted. Those forms found not to correspond to any description were, as a rule, carefully worked out and the records preserved, but it is unnecessary to describe them here, as they were only found in isolated cases. All the usual precautions were taken against contaminations, and, in addition, only those colonies selected from the plates which were in sufficient numbers to preclude the possibility of contamination and to eliminate, as far as possible, those microbes which had only recently become nasal inhabitants and had not yet grown in the nasal secretions to any considerable numbers. When one remembers the multitude of air bacteria which would naturally lodge against the nasal mucous membrane, and be only accidentally visitors to a soil unsuited to them, this precaution will not seem uncalled for. In all cases care was taken to ascertain that no nasal douches of any kind had been previously used. Any one, even those unfamiliar with the technique of bacterial analysis, will appreciate the amount of work required where so many different forms had to be carefully worked out; and that may be pleaded as an excuse for the limited number of cases brought forward. In the ten cases mentioned the condition of the mucous membrane was as nearly normal as possible, and even where insignificant changes were observed they are noted. The class of cases were not as diversified as could be desirable, as they were all dispensary patients. I made several bacterial analyses of the air of the Dispensary from time to time by Petri's and Sedgwick's methods, and by exposure of agar plates. At no time was there any growth but those of

* At the last meeting of the Russian Congress in St. Petersburg, Besser reported having examined the nasal secretions of 81 patients, the bronchial secretions of 10, and the secretions of the frontal sinuses in 5. Out of the nasal and bronchial secretions he cultivated the Fraenkel-Weichselbaum diplococcus of pneumonia in 14 cases, the staphylococcus *pyogenes aureus* in 14 cases, and the streptococcus *pyogenes* in 7 cases. Unfortunately, I have not been able to procure the original article and the reference in the *Centralblatt für Bacteriologie*, Bd. V, No. 21, is incomplete, not giving the conditions under which they are found.

simple air bacteria noted. The nasal bacterial forms were found to vary markedly with the state of the weather and of the streets. High winds and dry and dusty streets were sure to fill the noses with air bacteria. In rainy weather, or after several days of calm, or when snow was on the ground, aerial forms were much more rare. It seems to me there can be only one cause for this, viz.: They tend to disappear because they have found a soil unfitted for their growth, and, according to the universal law of natural selection, give way to microbial forms more favored by the conditions. It certainly is not because they flow away in the secretions, because it is not only their absolute frequency which varies, but their frequency relative to other forms. The reaction of the secretion of the normal nose was found to be neutral or slightly alkaline.

Case 1.—Young man in fair health with exception of slight cough. No pulmonary lesion; slight hypertrophy of one turbinated bone; nose otherwise normal. A short plump bacillus, looking at times like a diplococcus; slow white growth on gelatine, which it does not fluidify. Same on agar, spreading slightly on surface.

Case 2.—Young girl with slight tonsillar enlargement; nose normal; general health good. Bacterial analyses were made on three separate occasions, and twice was found a nearly pure culture of the staphylococcus pyogenes aureus. The tonsils were examined and the same growth found there. Inoculations of pure bouillon cultures in the jugular of rabbits set up purulent pericarditis and endocarditis, of which the animals died. The pus swarmed with the cocci.

Case 3.—Boy of 17, who had a perforation of the septum and hard palate from a syphilitic process. All ulceration had long healed and the mucous membrane was normal in appearance. The staphylococcus pyogenes aureus was found in large numbers, and a moderate growth corresponding to the bacillus lactis aerogenes.

Case 4.—Man of 35. A few weeks previously had been discharged from Roosevelt Hospital after a severe operation for the removal of a thyroid tumor. The wound had healed by first intention. Left laryngeal paralysis resulted. The nose was perfectly normal in every way. The staphylococcus pyogenes aureus and albus were both found and abscesses caused by the injections of pure bouillon cultures of each beneath the skin of rabbits. From these abscesses new cultures of the same growths were obtained in each case.

Case 5.—Child 10 years old. No subjective nasal symptoms, but the mucous membrane of the nose is slightly hyperæmic. In this case also both the staphylococcus aureus and albus were found, and positive results obtained from animal inoculations.

Case 6.—A seamstress aged 16. She had had considerable post-nasal catarrh but no purulent

secretion. Nose normal and health good. Two examinations six weeks apart were made. Each time in the nares was found abundant growth of the ordinary mould, the penicillium glaucum. Each time pure cultures were obtained from the post-nasal space of the streptococcus pyogenes. A pure bouillon culture was injected beneath the skin of rabbits' ears and an erysipelatous inflammation produced, from the sanious pus of which cover glass preparations were made showing abundant cocci in chains. At the second examination a culture of a gas-producing bacillus was also made from the tonsils. The most careful questioning could elicit no history of exposure to contagion of any kind. She herself was in the best of health except the discomfort from her post-nasal catarrh.

Case 7.—Girl, aged 16; cigarette maker. There was slight hypertrophy of the nasal mucous membrane and some tonsillar injection. The staphylococcus pyogenes citreus was found in the nose.

Case 8.—Child, aged 4. Slight post-nasal catarrh and slightly enlarged tonsils. Nose normal. In it was found the micrococcus flavus desidens.

Case 9.—Man, aged 19, with follicular tonsillitis and post-nasal catarrh. This case presented considerable structural change, and I insert the record here because, in spite of the large amount of secretion present, only aerial forms were found. They were the micrococcus flavus desidens and micrococcus cereus flavus, and an undetermined coccus with a curious growth on agar and gelatine, a description of which would be out of place here.

Case 10.—Woman, aged 20, with slight attack of laryngitis. She was recovering from coryza, and there was some mucus secretion in the nose. The bacterial contents were as follows:

1. Staphylococcus pyogenes aureus.
2. Micrococcus flavus desidens.
3. A tetrad resembling closely the descriptions of the micrococcus tetragenus.
4. An undetermined coccus, with a white non-fluidifying growth on gelatine and agar.

Cases.	Staphylococcus pyogenes aureus albus and citreus.	Micrococcus flavus desidens.	Bacillus lactis aerogenes.	Penicillium glaucum.	Micrococcus cereus flavus.	Micrococcus tetragenus.	Different undetermined forms.
1	• • •	• • •	• • •	• • •	• • •	• • •	1
2	1	• • •	• • •	• • •	• • •	• • •	• • •
3	1	• • •	1	• • •	• • •	• • •	• • •
4	1	• • •	• • •	• • •	• • •	• • •	• • •
5	• • •	• • •	• • •	1	• • •	• • •	• • •
6	1	1	• • •	• • •	• • •	• • •	• • •
7	• • •	1	• • •	• • •	• • •	• • •	• • •
8	• • •	1	• • •	• • •	• • •	• • •	• • •
9	1	• • •	• • •	• • •	1	• • •	1
10	1	1	• • •	• • •	• • •	1	1
Total, 10	6	3	1	1	1	1	3

The three last cases were examined during windy, dusty weather, and illustrate well, espe-

cially in the last case, the unreliability of cover-glass preparations alone of the nasal secretions in determining bacterial species, as the morphological appearance in four out of the five organisms was the same.

To summarize :

In six cases, the staphylococcus pyogenes.

In three cases, the micrococcus flavus desidens.

In one case, bacillus lactis aerogenes.

In one case, penicillium glaucum.

In one case, micrococcus cereus flavus.

In one case: Micrococcus tetragenus.

Once in each of three cases: Different undescribed forms.

The air forms may be dismissed without further consideration. The micrococcus tetragenus found in only one case and in few numbers, need only receive a passing mention. In Case 6 the only organism in the nasal chambers proper, which was made out by two careful examinations at different periods, was the ordinary mould, the penicillium glaucum. It was in such great numbers that it possibly may have overshadowed the growth of other forms. Considering its great aerial frequency, it is singular that it was not more often found. In this case the streptococcus pyogenes was twice found in the naso-pharynx, which was the seat of a chronic catarrhal inflammation, but which showed few changes in the mucous membrane besides the reddening of the surface and the increased secretion of mucus. For its pathogenic significance in the air-passages the works of Netter,^{5,22} Prudden²¹ and others may be referred to.

Our attention is therefore directed to the staphylococcus pyogenes; the three varieties, aureus, albus and citreus, need only be considered as one in their pathogenic significance. We know as yet too little concerning the conditions under which this organism exerts its characteristic influence, to draw conclusions. It may be well, however, to refer to the statements of a few of the various workers in this field.

Ullmann²³ found the staphylococcus in the air in different situations and under varying conditions, as well as in the water of the river Spree. He and others found it in the earth, on the streets and on the walls of various rooms and buildings. As to man, he says, "Fürbinger found it in the dirt under finger-nails, and Bumm in the folds of the nipples. Biondi obtained cultures of it from the saliva, and Fraenkel from the tonsils. I have found it not only on the buccal mucous membrane, in the saliva, the tonsils, the pharynx and vagina of healthy people and of animals, but in the œsophagus, intestinal tract and bladders of recently killed animals. Lustgarten and Manna-berg found it constantly in the urethra. These investigations show that the staphylococcus is very widely distributed, and that it is found wherever living beings are."

From this we see that its very frequent occurrence in the nose forms no exception to the rule. It will require investigation of many more cases than those here cited to prove that it is the most frequent and abundant microorganism in the nasal chambers. Netter,²² in speaking of the influence of pathogenic microorganisms in the mouth, nose and ears, says: "The presence of the microbes is not enough. It is necessary that they should be present in sufficient quantity to triumph over the resistance which healthy anatomical structures offer them. It is necessary that their virulence should be sufficiently great, and we know that their virulence is not always the same."

He might have also said that the resistance offered them is not always the same. On this head the work of Bujwid²⁴ is suggestive. He found that in round numbers a billion staphylococci aurei for a rabbit, a hundred million to a billion for a rat, and a hundred million for a mouse, could be injected beneath the skin of a healthy animal without result, no abscess forming.* When, however, grape sugar had previously been introduced into the animals' system they succumbed. Ribbert²⁵ and his pupils, Fleck²⁶ and Laehr²⁷, caused a catarrhal inflammation of the bronchi, with more or less broncho-pneumonia, by injection of pure cultures of the staphylococcus into the trachea. Their investigations, as well as those of Wysskowitzsch,²⁸ tend to show that the lungs or the adjacent bronchial lymphatic glands, act as a sort of filter or as a place of destruction for the microbe, preventing their further penetration into the human organism.

Prudden²¹ repeated the experiments of Fleck and Laehr with like results; he also succeeded in causing broncho-pneumonia by injections of pure cultures of the streptococcus diphtheriæ and by injections of ammonia.

Lübbert²⁸ caused fibrino-purulent tracheitis and bronchitis by injections of a pure culture of the staphylococcus into the trachea. It is asserted by many investigators, and their assertions are based upon extensive experiments, that it is the pavement epithelium which prevents the entrance of the various microbes into the subjacent structures and thence into the general system. The very general experience of laryngologists would hardly bear this out as regards the staphylococcus, since tonsils and uvulæ are cut without fear of septic invasion, and in all the operations upon the mucous membranes of the mouth and nose this is the least danger we fear. If, however, a patient bites the operator's finger so as to break the skin, unless the wound is thoroughly washed out with an antiseptic, local suppuration often

* Since this paper was written, the very valuable papers of Buchner (Centralbl. f. Bact., iv, 25, and v, 1), and Nissen (Zeitsch. f. Hygiene, vi, 3), have come under my observation. They give convincing proof that it is the albumin in the blood plasma that exercises the destructive influence on bacteria in the circulation.

follows, and occasionally, from this, general sepsis.

I have mentioned the above facts and observations in order to show how little we as yet know and how vastly much more we have to learn about this comparatively well-known microbe so often found in the upper-air tract of healthy people. Before closing this already too extended contribution, I wish to make mention of some investigations, as yet very incomplete, which I have been engaged upon during the last two months, more in the hope that others with more leisure and better opportunities will continue them, than from an expectation of adding much to our knowledge. I refer to the nasal chambers as a bacterial filter of the air passing through them.

It has been definitely proven by the investigations of Grehan,³⁰ Paulsen,³¹ Aschenbrandt³² and Bloch³³ that the nasal chambers are not only warmers and moisteners of the inspired air, but act also as a filter for fine dust particles. The latter observer experimented with many substances in fine powder, and came to the following conclusion, as did Grehan and Aschenbrandt: "A certain part of all kinds of dust, even the finest, is held back; the larger part of the formed substances which float in the air do not reach the entrance of the larynx, or even the choanæ, but it is impossible for the nose, even with the help of the naso-pharynx, to *completely* free the air even from the coarser kinds of dust."

Now a bacterium, whatever its relative proportions to other divisions of matter with which we are familiar, is a ponderable substance, heavier than air, water or any of the animal fluid secretions. It is therefore subject to the same physical laws. It is yet an unsolved mystery how the bacillus tuberculosis reaches the most frequently chosen seat of its selective action in the apices of the lungs and how the pneumococcus usually reaches the lower lobes before we have lobar pneumonia. To a bacteriologist it is almost inconceivable how a microbe entering the anterior nasal meatus with the tidal air should go through the tortuous, moist passage of the nose, past the broad surface of the palate and the post-pharyngeal wall into the larynx, between the false and true vocal cords, down the long tubes of the trachea and bronchi, and finally find a lodging place on the walls of the bronchioles and air-cells. The chances of its being arrested before it reaches them seem almost infinite, especially since the tidal air must stop at a comparatively high point in the respiratory channel in inspiration, and flow upwards again on expiration. Neither does it seem probable that becoming arrested at some higher point it flows downward with bronchial secretions, when we remember the ciliated epithelium and its function. The lymph channels have been strongly urged as an explanation, but, although our knowledge of the pulmonary lymphatics is very limited, there are many objections to this vague theory which will occur to every one. The day for theorizing has gone by. A theory now-a-days should be considered as little better than confession of ignorance. However small and insignificant an addition to our knowledge, the ascertaining of the capacity of the nose as a place of arrest for microbes may be, it seemed so easy of demonstration that I have attempted it. The technical difficulties were many, but have been fairly overcome, though it needs a much more extended and varied research than I have yet made to draw conclusions. The task is easily stated: Ascertain the bacterial contents of the air before and after it has passed through the nose. Glass tubing of a calibre of $\frac{3}{8}$ to $\frac{1}{4}$ of an inch in diameter and 6 inches long was filled with granulated sugar for $3\frac{1}{2}$ inches of its length, held in place at the bottom by a piece of rolled copper gauze, tightly fitting the tube, leaving enough space at each end for the insertion of a cotton plug. The sugar grains were of a uniform size of forty to the inch. This part of the apparatus was copied from that of Professor Sedgwick and G. R. Tucker, of Boston, to whom I am greatly obliged for a description of their method of air analysis, kindly sent to the College Laboratory some time before it was communicated to the Society of Arts, in whose proceedings for 1887-1888 it may be found. Their rules for sterilization of the sugar and the apparatus were also followed. For reasons which I need not stop to explain here it was found best to vary their procedure considerably and adopt, to some extent, the method of Petri,³⁴ with sand. After proper sterilization the glass tubing was attached, by means of stiff rubber tubing, to an air-exhaust apparatus. As there was a good head of water in the laboratory a Sprengel's air-pump was principally used, by means of which one litre of air could be drawn through the $3\frac{1}{2}$ inches of sugar in from forty seconds to one minute. Usually, however, a very perfect air-exhausting apparatus may be obtained by making use of the Allen Surgical Pump, of the size used for veterinary purposes, which I show you here, in connection with the air filter. About one hundred revolutions of the handle of this instrument, which can be made in forty-five seconds, or a minute, will exhaust one litre of air. With either contrivance it is perfectly easy to ascertain the rate at which air will pass, by means of a litre-flask inverted in water. It has been proved by Sedgwick, and I have verified the statement, that air passing at about this rate will deposit all its bacterial contents in the sugar.

With this apparatus, then, 10 litres of air are drawn through the filter after the cotton plugs used during sterilization have been withdrawn. Then 10 litres of air at the same time and in the same locality are drawn through the nose and also through the filter. This is accomplished as

follows: The glass tubing with its load of granulated sugar, all thoroughly sterilized, is enclosed by means of a perforated rubber cork in a larger piece of glass tubing and the space between the two loosely packed with absorbent cotton. The end of the smaller tube does not reach to the end of the larger. The filter thus protected from the bucal secretions is put in the mouth and the lips closed firmly around the outside tubing. If held in a horizontal position in the mouth nothing but air can enter the filter when the suction is begun. During alternate periods of fifteen seconds each the person is directed to hold his breath, making the thoracic walls rigid. Thus practically all the air drawn through the filter must have first passed through the nasal chambers and the post-nasal space. During the fifteen seconds of respiration the air-current is shut off by compressing the rubber tube between the filter and the suction apparatus, consequently the time consumed in the examination of the nasal air is twice that consumed in the control examination. The plan adopted by Aschenbrandt and others of drawing the air up one nostril and down the other before examination, besides other faults, permits the entrance of mucus into the air filter, which it is impossible to protect from contact with the walls of the nasal chambers.

After the 10 litres of air are drawn through in each case the sugar is dampened and partly dissolved with a few drops of carefully sterilized water to facilitate its removal from the glass tubing. By means of a sterilized, stiff brass rod the wire gauze is pushed along the tubing, forcing the wet and partly-dissolved sugar out into shallow glass dishes, where it is thoroughly dissolved and mixed with 10 per cent, nutrient gelatine. The glass tubing is filled with gelatine and stopped at both ends with cotton. The gelatine in the dishes is allowed to solidify slowly, so as to insure the complete dissolving of the sugar. It was found that very few, in many cases no colonies developed in the glass tubing, so completely did the sugar carry along its bacterial contents with it when pushed out. I have described the process hurriedly and omitted descriptions of the routine precautions taken in sterilizing, controlling and guarding against aerial contaminations which belong to the technique of careful bacterial analysis.

The colonies developed after several days in the two sets of dishes were counted and compared. As I said before, too few examinations were made to arrive at hard and fast conclusions. I only experimented on my own nose, and have succeeded only recently in getting results free from errors of technique. Speaking in a general way, the nasal chambers in my own case seem capable of filtering out about three-fourths to four-fifths of the bacterial contents of the air passing at the rate of one litre per minute. The photographs

of an examination made during the presence of a considerable quantity of mould in the air, illustrate this fairly well. This particular experiment was photographed because the white moulds show the difference in a more striking manner than bacterial colonies, but the same proportion seems to hold good with them, as for instance, in an examination made April 25th of this year:

Ten litres of laboratory air contained 4 moulds and 125 bacteria.

Ten litres of laboratory air after passing through nose contained 1 mould and 24 bacteria.

Of course noses must differ in this respect as in other ways, and the rapidity of the current we know makes a difference in the number of both moulds and bacteria deposited in Hesse's apparatus. Counting 500 cc. as the tidal air with each inspiration, we have about nine litres per minute passing through the nasal chambers in normal respiration. In the experiments just mentioned the rate was only a little over one litre per minute. In spite then of the apparently well-adapted arrangement of the nasal chambers for a bacterial filter, even at this rate, a really large number of bacterial forms are carried at least into the larynx. It is to be hoped that further and more complete and reliable investigations will confirm or refute this somewhat premature assertion. Unless we throw aside the very numerous and careful observations made by bacteriologists in pulmonary diseases as useless, it is surely of the greatest importance that we should know something of the mode of ingress of microbes into the deeper pulmonary tracts.

DR. JOHN MCKENZIE, of Baltimore, thought the solution of many points in nasal pathology by bacterial investigation would not be an event of the immediate future. The problem is an intricate one, especially in view of the constantly changing environment of the individual. The dependence of ozena on micrococci has not been determined.

- ¹ Biondi. *Zeitsch. f. Hygiene*, Bd. ii, 1887, p. 194.
- ² Vignal. *Comptes rendus de l'Académie des Sciences de Paris*, Tome xv, No. 6, p. 311.
- ³ Netter. *Bull. Med.* ii, année No. 59, p. 977.
- ⁴ E. Fraenkel. *Deutsch. Med. Woch.*, No. 6, 1887.
- ⁵ Hesse. *Deutsch. Med. Woch.*, Nos. 2 and 5, 1884.
- ⁶ Löwenberg. *Deutsch. Med. Woch.*, Nos. 1 and 2, 1885.
- ⁷ Klammann. *Allg. Med. Central Zeit.*, No. 67, 1885.
- ⁸ Thost. *Deutsch. Med. Woch.*, 1886.
- ⁹ Seifert. *Volkmann's Vorträge*, No. 240.
- ¹⁰ Strauch. *Monatsch. f. Ohrenheilkunde*, Nos. 6 and 7, 1887.
- ¹¹ Valentin. *Corresp. blatt. f. Schw. Aertzte*, No. 51, 1887.
- ¹² Hajek. *Berl. Klin. Woch.*, No. 33, 1888.
- ¹³ Reiman. *Inaug. Dissert.*, Würzburg, 1887.
- ¹⁴ Walb. *Erfahrungen, auf dem Gebiete der Nase und Rachen Krankheiten*, Bonn, 1888.
- ¹⁵ Cardone. *Archiv. Ital. di Laryngologia*, July, 1888.
- ¹⁶ Hueter. *Allg. Chirurg.*, Leipzig, 1873, p. 257.
- ¹⁷ Herzog. *Wiener Med. Presse*, 1881, No. 29, et seq.
- ¹⁸ E. Fraenkel. *Virch. Arch.*, No. 90.
- ¹⁹ B. Fraenkel. *Berl. Klin. Woch.*, 1886, No. 17, p. 267.
- ²⁰ Strauch. *Monatsch. f. Ohrenheilkunde*, 1887, No. 6, p. 151.
- ²¹ Prudden. *Am. Jour. Medical Sciences*, April, May, June, 1889.
- ²² Netter. *Annales des Mal. de l'Oreille*, etc., Oct., 1888.
- ²³ Ullmann. *Zeitsch. f. Hygiene*, Bd. iv, Heft 1.
- ²⁴ Bujwid. *ref. Centralbl. fur Bact.*, No. 9, 1888.
- ²⁵ Ribbert. *Deutsch. Med. Woch.*, No. 42, 1884.
- ²⁶ Fleck. *Dissertation*, Bonn, 1886.
- ²⁷ Laehr. *Dissertation*, Bonn, 1887.

THE IMPORTANCE AND ESSENTIAL NEEDS OF LOCAL BOARDS OF HEALTH.

Read in the Section of State Medicine, at the Fortieth Annual Meeting of the American Medical Association, June 25, 1889.

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Although much has been said and written upon the subject of local health organizations, the difference which is still widely prevalent in our country, outside of the large cities, in regard to the necessity for the formation and proper administration of such bodies, and the great intrinsic importance of the question itself, furnish some reasons for additional remarks.

The protection and preservation of health through measures taken against those dangers which threaten it from preventable causes is a subject which not only concerns sanitarians but also every member of a community, and as these measures must necessarily depend chiefly upon the local board and its health officer, the value of efficient boards of health cannot be overestimated if the advantages of sanitary measures are to be regarded at all. It is, indeed, unnecessary to remind any intelligent man who has paid the least attention to sanitary science of the importance of local boards of health; yet, while all thoughtful persons appreciate the need of them, there are many communities which are not alive to this necessity, as is evinced by their unwillingness to have a local board, or else by their failure to confer sufficient powers upon it or to contribute their hearty support after it is established.

It is, notwithstanding, a matter settled beyond the possibility of question, no longer admitting of argument, that the proper enforcement of suitable health regulations and due attention to sanitary requirements have achieved most striking results in reducing the general death-rate, and in limiting especially the prevalence of the zymotic diseases and of others whose occurrence is facilitated by local uncleanness or unsanitary conditions. Through the exertions thus made for the prevention of disease, other advantages have ensued. The aid afforded by the application of sanitary principles in promoting the advancement of Christian morality by improving the condition of the wretched abodes of the poor in the large cities and by the prevention of overcrowding is of incalculable benefit; the saving of expense which has been often estimated in particular instances, is perhaps not too strongly expressed in the lan-

guage of Mr. Gladstone in one of his addresses: "There is no greater economy than the saving of human life."

It is needless for me to quote from the enormous mass of statistics to show the actual good that has been done by the carrying out of sanitary reforms. These are particularly striking in the case of England, the foremost country in the world in the care that is taken of the public health. The action of suitably constituted health authorities has made London the healthiest large city in the world, reducing the general death-rate, which for a number of years during the eighteenth century is said to have been not less than eighty out of every thousand, to twenty to the thousand, and has also throughout England accomplished analogous results. It has effected wonderful improvements in the British Colonies, where such cities as Bombay, Calcutta and Hong Kong have been freed from the terrible epidemics which formerly were liable to devastate them; and in other countries of Europe, and in our own land, it has accomplished much, although far from what is possible. Owing to the care that is now taken small-pox, yellow fever and Asiatic cholera are greatly restricted and no longer sweep uncontrolled through cities as in former times. In short, some of the greatest achievements of modern science have been in preventive medicine and, owing to the remarkable discoveries of Robert Koch and other bacteriologists, we are on the eve of restricting in some degree that dread disease, pulmonary tuberculosis, by taking precautions formerly considered unnecessary.

In cities, indeed, the advantages of proper sanitary administration are so obvious that they will not be disputed; but neither is it of little importance in smaller places and in rural communities. The intimate relations which exist between town and country at the present day not only render the sanitation of villages and rural districts a matter of importance to themselves, but also may be attended with far reaching consequences to others, which becomes evident when we recollect that most disastrous results may arise from neglect of sanitary precautions in some small village or obscure house. It was the disregard of these in the case of a single isolated dwelling which was the cause of the unfortunate epidemic at Plymouth, Pa. The great epidemic of typhoid fever in the parish of Marylebone, London, in 1873, was traced to a single case at a country farm which supplied milk to a dairy in that parish, directly occasioning no less than 218 cases of the disease, from which a very large number of additional cases originated. Since that time as many as eighty-one epidemics have been traced in various parts of that country to milk distribution.

Speaking generally, the ultimate object of all sanitary endeavor is to prevent the spread of infectious and contagious diseases, and to lessen or

²⁸ Lübbert, *Der Staphylococcus pyogenes aureus und der Osteomyelitis-coccus*, Würzburg, 1886.

²⁹ Wyssokowitsch, *Wien. Med. Presse*, No. 6, 1889, p. 231.

³⁰ Grehan, *Recherches Physiques sur la Respiration de l'Homme*, Paris, 1864.

³¹ Paulsen, *Separatabdruck aus dem LXXXV, Bd. d. k. Akad. der Wissenschaft, Abth. 3*, 1882.

³² Aschenbrandt, *Die Bedeutung der Nase für die Athmung*, Würzburg, 1886.

³³ Bloch, *Zeitsch für Ohrenheilk.*, Bd. xviii, p. 215.

³⁴ Petri, *Zeitsch für Hygiene*, 1887, iii, S. 1.

remove influences injurious to health by securing the highest degree of cleanliness practicable and by exercising supervision over the air, food and water supply. In addition to this, there is the important matter of the registration of vital statistics. Now, to accomplish all that is needed for the attainment of these objects, the requirements which, in the complex conditions of modern life, are necessary, are so very numerous that they cannot be satisfied by the action of the ordinary local authorities as such, but give ample and varied scope for the work of permanent independent organizations, which should be given all the legal authority and means necessary for the due discharge of their office. While fully recognizing the great value of State Boards of Health in their proper sphere, it is to local boards that we must mainly look for the actual carrying out of the details of sanitary reform and the achievement of the direct and practical results required for the protection of the public health; so that the sanitary work of a State may be said to be, in the main, the sum of the work accomplished by its local boards, and in so far as the State boards succeed in influencing them to perform their duties, they will have fulfilled no small part of the purposes for which they were created. That there should be, therefore, a complete system of sanitary administration, boards of health should be established in every city, town and incorporated village, and in the less thickly settled States and where the necessity exists they should also be established for townships or counties.

Whether or not a single health officer with all the powers of a board may not in some cases be more desirable, I will not attempt to discuss. And yet outside of the large cities, where the necessity for them is so urgent and imperative that there are usually well constituted boards of health, although often suffering for the want of sufficient appropriation, in many of the States there has existed and does still exist, notwithstanding there has been of late much improvement, a most unsatisfactory condition of affairs, as may be seen by referring to Dr. Toner's paper on "Boards of Health in the United States,"¹ or the information upon this subject to be found in the reports of the various State Boards. It is surprising that the need is not more keenly felt, and yet it would seem as if an active board of health is often looked upon as a set of sanitary fanatics who involve a community in expense, annoyance and useless alarm, frightening away newcomers and involving every one in unnecessary trouble, opposition frequently coming from the very classes who need it most; for, as Sir William Jenner says, "the value placed by a community on individual life is one of the great tests of the state of civilization." The obstacles in the way of boards of health are in fact mainly due to the indifference, ignorance and prejudice on the part of

communities and of the authorities upon whom their appointment rests, which interfere with proper legislation and with adequate support of the board after its formation.

One of the principal reasons for this indifference and apathy is that the work done by boards of health being of a preventive nature, the results obtained are not at once appreciated by the public at their full value; since to estimate and demonstrate their worth, requires a very careful consideration of all the vital statistics and conditions of a locality. As Dr. Parkes has stated, "the establishment of the Registrar-General's office in 1838 and the commencement of the system of accurately recording births and deaths will hereafter be proved to be, as far as the happiness of the people is concerned, one of the most important events of our time." It sometimes happens, moreover, that, owing to the great natural advantages of a place and the absence of any serious epidemic, the general death-rate may be quite low, even for a number of years, without due attention being paid to sanitary requirements, and a community is not slow in seizing upon this as a reason for neglecting its duty. Sooner or later, however, there will be disaster, of which there were several instances in Newport a few years ago, notably as regards diphtheria, four and even six cases occurring in single houses. The frequent excuse that the general health of a community has been sufficiently satisfactory without stringent health rules is of no real weight, for the question is not so much how little sickness exists as whether any disease has prevailed that is preventable and whether, if proper measures had been taken, the death-rate would not have been still smaller.

Another reason for the prejudice against boards of health is the refusal to see that expert knowledge is required in sanitary matters. Instead of listening to those competent to give advice upon such subjects, communities and city councils are apt to consider themselves fully able to judge about all questions relating to the public health, and because they themselves are not convinced of the need of sanitary reform they conclude that the need does not exist, their attitude towards sanitary science reminding one of the sarcasm of Socrates regarding political science, that he supposed it could not be taught, since the Athenians, although asking the opinion of experts upon all other questions, when it came to politics appeared to look upon every man, however ignorant and uninstructed, as qualified to give advice. Another cause for the dislike is an unreasonable fear and jealousy that individual rights and personal liberty may be invaded by unnecessary rules and restrictions, but liberty is not license, and no man has a right to endanger the health and well being of his neighbors or of the community. Still another cause is that for political reasons the officers of many municipalities object to a separate board

¹ American Public Health Association Reports, Vol. i, p. 499.

of health, being unwilling to relinquish any particle of power. Thus it unfortunately happens that at the present time so many of the health departments, even of our large cities, are improperly organized and entrusted with insufficient powers.

To promote, therefore, the establishment of local boards of health and to render them efficient (for an inefficient board of health may be worse than none at all), there are various needs which must be satisfied, relating, 1, to the appointment and organization of the board; 2, the legal powers with which it is entrusted; and 3, the means by which its orders are carried into effect. First, the State law upon the formation of local boards should be mandatory, and if certain of the local officers are designated in it as members of the board—which, if allowable in small places, is certainly objectionable in cities, where the board should be as far as possible removed from the influence of local politics—it should be clearly specified that such boards must be distinct organizations with their own independent and peculiar duties and separate officers, who shall be regularly and formally elected. The experience of many of the States, Rhode Island among the number, shows that merely *ex officio* boards of health entirely composed of the local town or city authorities, without regular organization and definite duties, are incompetent to deal adequately with health problems; in ordinary times they are inactive, and when an epidemic comes they are usually unprepared and unable to act as the occasion demands.

With regard to the method of organizing an independent board, little or nothing can be added to what has been already said in the admirable papers of the late Dr. Leconte² and Dr. Lee.³ The appointment of the members, when not designated in the State law, will usually rest with the City Council or town or village officers, and they should not be chosen by popular vote. They should be from three to seven in number according to the size of the place and, as a board of health should be a permanent body and may be expected to increase in efficiency from past experience, the terms of office should be for long periods and should not all expire at the same time; so that the membership, if changed at all, should only be done so gradually, leaving always a majority of old members. Those who are selected should be appointed, as far as possible, with a view to their fitness for the position. Too often this is utterly disregarded, and from local political influence the appointment is frequently made of men who are not only uninformed about sanitary

matters, but may even be indifferent or antagonistic to them and greatly obstruct the board's work. The words of John Stuart Mill, referring to this country, may well be borne in mind, when he spoke of the "incompetency and mismanagement arising from the fatal belief of your public that anybody is fit for anything." The board should elect a chairman or President and a Secretary, and it will be of advantage, when it is composed of five or more members, to appoint standing committees upon special departments of sanitary work. The health officer, upon whose efficiency the successful accomplishment of the measures directed by the board largely depends, should possess suitable qualifications, and a good salary should be attached to the office, that men of sufficient ability may be secured. He should usually be a physician unless none can be obtained, and should be appointed by the board, not by the local authorities. He should be present at its meetings but not vote.

It is an absolute necessity that boards of health should be given full power to enforce all sanitary ordinances and laws and have authority to arrest and punish any persons who may resist their legal orders or endeavor to prevent their being carried into effect. Various provisions are made in the different States for the legal enactment of health regulations. In some they must be adopted as ordinances in town meeting or by a City Council, who are, however, not always willing to do this. In others, like the State of New York, full power is given every local board to make regulations which shall be obeyed as laws. The law of the State of Maine upon this subject seems to me a very satisfactory one, viz.: that such regulations, after being adopted by the board, become legal on the approval of a Justice of the Supreme Court of the State. It is highly desirable that, as has been done in many States, there should be a general form suggested by the State Board for local ordinances; capable, of course, of modifications or additions. This will to a great extent silence criticism when it is known that similar regulations apply to all localities in the State. It is advisable that the regulations be not too numerous, as they are worse than useless if the local board cannot enforce them.

Local boards, even when legally authorized to enforce sanitary ordinances, do not always in practice find it easy to do so. In large cities boards of health have their own legal and police officials, and so are able to act with promptness. In smaller places the actual enforcement of the laws must be done through the ordinary local prosecuting and police officers, who must be definitely required to attend to violations of ordinances or regulations reported to them by the board without unnecessary delay. In places of sufficient size one or more special sanitary police will be of much assistance, and there should also be, whenever required, a suffi-

²"Sanitary Problems: The Proper and Rational Method in which Municipal Boards of Health should be Organized." By John L. Leconte, M.D. American Public Health Association Reports, Vol. iv, pp. 131-134.

³"The Proper Organization of Local Boards of Health." By Benj. Lee, A.M., M.D., Ph.D. First Report of Pennsylvania State Board of Health, p. 135.

cient number of inspectors and other officials for attending to the various necessary details of the work of the board. It is needless to say that a board of health is helpless without a sufficient appropriation.

It is a far easier task to point out the want of boards of health and their needs when established than to provide a remedy, but the main effort should be directed towards impressing upon the community in general and local authorities in particular the value of the results to be accomplished through boards of health, and so to educate the public that a separate health organization will be looked upon as much as a matter of course as a fire or police department.

There are several influences which will tend to create this desirable condition of affairs. First, as before said, if it can be obtained, let there be a State law, of which that of New York furnishes a good pattern, requiring the formation of separate local boards at least for cities and towns, for nothing short of this will succeed in overcoming the apathy manifested in some localities. In Connecticut, for example, five months even after such a law was in force, in 1887, such was the indifference that fifty towns had not organized their boards and reported their health officers to the State Board in compliance with the law, notwithstanding that they had been notified of their duty. The subsequent effect of the law, however, in that State has been most satisfactory. Let all the influence, then, of State Boards, sanitary protection associations, the press, physicians and clergy be exerted to obtain such legislation, and when this is unattainable let, at least in the separate towns, endeavor be made as far as possible to move the local authorities to action. The State Boards especially can do much towards securing proper legislation and can greatly assist the local boards by providing them with all the information they need, especially on their first organization. Great assistance may be rendered by sanitary protective associations. That of this city, the first organized in America, has exerted, in spite of a large amount of abuse and opposition, no small influence in securing a board of health and in interesting the community in sanitation. The influence and work of a local board can be greatly aided by the physicians of the place through their coöperation in checking the spread of infectious diseases and in assisting in the proper registration of vital statistics, in calling attention to sanitary requirements and in general support. In this connection I would refer to the paper by Dr. Bryant, of New York.⁴ The press and clergy can also be of great help; and finally, the board itself, by its efficient work its tables of statistics, and care not to be unreasonably exacting, can gradually elevate the

public sentiment and attain to the position of importance which it ought to occupy.

The history of the city of Newport in its health matters will serve as an illustration of some of these remarks. Its celebrity and importance as a place of summer resort render a due attention to questions relating to the public health of peculiar importance to its prosperity. Attention has been repeatedly called to defects in its sanitary administration and the nuisances which were suffered to exist, by the late Dr. Marion Sims, by Dr. John C. Peters, by Mr. Bowditch in a report of a house to house inspection published by the National Board of Health,⁵ by Dr. Storer, and also by the city Sanitary Protection Association, and the need was urged of a separate board of health; but the law of Rhode Island not requiring, but merely permitting the formation of independent health boards, the power to establish such a body rested entirely with the city board of aldermen. By petitions, representations, and the exercise of influence of various kinds, the aldermen were at last brought to see the advisability of a separate board, and accordingly in 1885 an ordinance establishing one was passed. This ordinance is not permanently in force, but requires to be reordained every year, and gives to the board limited powers, it having no authority to make, but only to suggest sanitary ordinances, while the city authorities still retain control over matters over which the board of health should properly exercise supervision; such, for example, as the disposal of garbage. The executive officer can only be nominated by the board, and is appointed by the City Council. The board has legal authority to abate nuisances and enforce regulations, but the means of promptly enforcing them seem as yet imperfect, apparently from a want of a thorough understanding and coöperation between the board and the city legal and police authorities. Nevertheless it has done good work in preventing the spread of infection and in keeping the public informed, by the tables it publishes, of the state of the public health. Where it has been least successful is in remedying the old leaking cesspool system of drainage and other similar evils, for which the city authorities are in no small degree responsible, as they have not yet passed an ordinance making sewer connections compulsory in the compact part of the city, notwithstanding this has been recommended in three successive reports by the board. The board has thus been impeded by want of proper legislation, as well as by the want of means to carry out reforms, but it is made up of competent members possessing the public confidence, and there are few in the city who would now wish to return to the old state of affairs.

It is to be hoped, therefore, that as the public both here and elsewhere become more fully convinced of the importance of the matter, this and

⁴ "How can the Medical Profession aid the Board of Health?" By Joseph D. Bryant, M.D., Health Commissioner, New York. N. Y. Medical Record, November 12, 1887, p. 613.

⁵ Report of National Board of Health, 1882, appendix C., p. 153.

other places in like condition may not long be destitute of what are so needful for their welfare, thoroughly efficient independent boards of health, with ample powers.

DR. HIBBARD, of Indiana, said that in new organizations there was generally an attempt to mark out too extensive a programme at the outset, and that in his opinion it was better to advance more slowly, to be active in these matters but conform to the character of the environments.

DR. SMART, U. S. A., expressed himself as in favor of activity and energy in these directions.

DR. MORRIS said that for his part he was greatly interested in the matter of plumbing and that, greatly to his surprise, he found in the hotels of Newport abundant evidence of neglect in this important matter.

DR. STORER, of Newport, replying to Dr. Morris, explained that while the Board of Health of Newport had done what it could, it was aware that some of the hotels had not yet adopted the suggestions of the Board.

DIOSCOREA VILLOSA—WILD YAM.

Delivered in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY JOHN V. SHOEMAKER, A.M., M.D.,
OF PHILADELPHIA, PA.

It is the writer's purpose in this brief paper to call attention to *dioscorea villosa*, a valuable plant, but one that is seldom employed by reason of the scant literature upon its medicinal action. It is my hope that if the short clinical experience which I have had in the past continues to bring good results, that in the future it may lead to further and better investigations upon this remedy.

Dioscorea villosa, a plant which is commonly known as wild yam or colic root, is found in profusion throughout the Southern and to a limited extent in the Northern and Western States. Thirty years ago it was enlogized by King, of the Eclectic School, as a true specific for bilious colic, no other agent being necessary in this disease as it gives, he reported, prompt and permanent relief in the most severe cases. This statement has been repeated many times since by the disciples of the Eclectic doctrine, and is undoubtedly true. The part of the wild yam used is the root, which is inodorous, but on bruising develops a slight woody odor. To the taste the root is somewhat pungent, sweetish and bitterish. It is pulverized with difficulty, yielding a yellowish gray powder. The root is soluble in both water and alcohol and contains an active principle known as *dioscorein*, which possesses nearly all the medicinal virtues of the root. A further analysis of the root would be of great advantage in studying this plant, as

well as an investigation upon the physiological and therapeutic action of the active principle. The want of time has prevented my giving attention to the all important consideration of this portion of the subject, which I hope to investigate, or see others do so in the future. I therefore regret I am not able to add in this connection the physiological action of this plant which still remains to be studied. The scope of the paper is limited to the clinical results so far experienced from *dioscorea*. The preparations of wild yam usually employed are a decoction, the dose being from one to four fluid ounces, a tincture, the dose from ten to sixty minims, and the fluid extract, the dose being about half of that of the tincture.

Large doses of any of the preparations named have produced emesis. From its action it has been classified by King as an anti-spasmodic. It acts likewise as a diaphoretic and has some expectorant properties. *Dioscorea* appears to have an especial effect upon the liver, as *nux vomica* has for the spinal cord. It is a most useful remedy in the treatment of the various diseases of the hepatic system. In that painful affection known as bilious colic, which is the result of the pressure or impaction of one or more gall-stones in the biliary ducts, *dioscorea* often affords great relief. The treatment usually recommended consists of the administration of copious draughts of hot water, a prolonged course of phosphate of sodium, the inhalation of chloroform, heroic doses of morphine, or a combination of turpentine and ether, and even with all these remedies we are told that the disease may persist for days and weeks. Yet as related by King thirty years ago, and as restated by Dr. Todd in the *Atlanta Medical and Surgical Journal* some two years past, every case of bilious colic can be cured in a brief period, varying from a few minutes to a few hours by the administration of *dioscorea* alone.

The only qualification necessary to this claim at present is that the cases must be of pure biliary nature due to the presence of a gall-stone or of thickened, hardened bile in the biliary ducts, and not cases of intestinal colic from other causes. A good rule in practice is to see if with the colicky pains and nausea there be also any yellowish discoloration of the skin or conjunctiva. If there is, *dioscorea* will usually give prompt relief; if there is not, it may have to be supplemented with other remedies. Even when the stage of incipency is passed, when the delicate lining of the ducts are engorged and inflamed, so that the bile cannot pass through, *dioscorea* will be found of infinite value in lessening the engorgement, relaxing the tension of the biliary channels, and cutting short the course of the disease. That indefinite complaint known as hepatic torpor or hepatic indigestion, resulting in dull headaches, loss of appetite, mental inaptitude, causeless melancholy, and a train of other symp-

toms, can be quickly and permanently relieved by the fluid extract of dioscorea taken in fifteen drop doses before meals. Of course if there be another cause at work, such as constipation, improper hours, ill-prepared food, excessive use of liquor or tobacco, etc., they must be removed or counteracted. If tonics are needed, they must be given in addition to the dioscorea. An excellent tonic containing dioscorea is as follows:

Take of fluid extract of dioscorea villosa, 1 ounce.
Compound tincture of cinchona, 5 ounces.
℞. Dose: A teaspoonful in water before meals.

In cirrhosis of the liver too much benefit must not be expected from any remedy. In spite of all our efforts the inexorable advance of the fibrous connective tissue, crushing out blood-vessels, biliary cells and nerves, can be retarded for only a short time. My experience leads me to hope that for this purpose dioscorea may be found more beneficial than the two-edged mercuric, bi-chloride, which is now so largely employed. In chronic congestion of the liver, characterized by fullness of the right side and an increased area of percussion dulness and a general impairment of the digestive functions, a marked improvement and a gradual cure may be obtained by the administration of from ten to forty drops of the fluid extract of dioscorea in water before meals. In those suffering from an over-indulgence in alcoholic stimulants, and in alcoholic catarrh of the stomach, no better remedy can be suggested than dioscorea. The following combination in the latter disease is of value:

Take of tincture of belladonna, 24 drops.
Tincture of nux vomica, 1 drachm.
Tincture of dioscorea villosa . . . ½ ounce.
Syrup of ginger, 2½ ounces.
℞. Dose: A teaspoonful in water every 4 hours.

In chronic malaria great benefit can be derived from the use of dioscorea alone or in combination with other remedies. A prescription of service in this affection is appended:

Take of solution of arsenite of potassium, 1 drachm.
Tincture of dioscorea villosa . . . ½ ounce.
Compound tincture of cardamon, 2½ ozs.
℞. Dose: A teaspoonful in water after meals.

The following combinations containing dioscorea will also be of benefit in malaria:

Take of tincture of nux vomica, 1 drachm.
Tincture of dioscorea villosa . . . ½ ounce.
Compound tincture of cinchona, 5 ozs.
℞. Dose: A teaspoonful in water before meals.

Take of sulphate of quinine, 20 grains.
Tincture of dioscorea villosa . . . ½ ounce.
Syrup of orange flowers, 3 ounces.
℞. Dose: A teaspoonful in water every 4 hours.

For preventing bilious headache, or modifying the attacks after they have appeared, dioscorea has proved of value. In intestinal indigestion, due to the lack of sufficient bile as manifested by the development of offensive gases, clay colored

stools and general mal-assimilation, remarkable benefit may at once follow the use of dioscorea combined with a little capsicum or strychnine.

Cancer of the liver is of course an incurable disease but more relief can be afforded to patients suffering from it by adding dioscorea to their morphine than by administering morphine alone. It is probable that dioscorea will be found of great service in the treatment of many other diseases totally unconnected with the liver. Its great power in relieving the spasm or contraction of the biliary ducts would indicate its use in various affections where anti-spasmodic remedies are requisite. Time and investigation alone can adequately measure its importance. I hope that the recital of my experience with it and the gratifying results it has yielded will induce others to test the efficacy of this valuable remedy. The following cases may be of interest showing the beneficial results from the use of dioscorea:

Case 1.—Mrs. A., aged 35, had been suffering from colic at times for eight months. The attacks lasted from eighteen to twenty-four hours and often recurred weekly. The pain was frequently intense and could only be temporarily allayed by whiskey and laudanum. Spontaneous relief was always preceded by vomiting after, as she tersely expressed it, "she was played out by the pain." On one occasion the pain was so violent that the attending physician, becoming alarmed, sent for me in consultation. On entering the room the yellowish hue of the patient's face, arms and neck at once attracted my attention. The conjunctiva was unchanged. On inquiry I learned that her color varied similarly with every recurrence of the colic, and gradually became normal after the subsidence of the pain. As this was the first case of biliary colic that I had seen since the publication of Dr. Todd's article, I determined to try the merits of dioscorea on it. I accordingly sent for one ounce of the tincture of dioscorea, and directed that the patient be given thirty to sixty drops every half hour until the pain lessened. On calling in the evening I was surprised and gratified to learn that the pain had disappeared with the third dose of the medicine and had not returned. I then ordered the remedy to be continued in the same doses every three hours, and instructed the attendant to search any evacuation that might occur from the bowels for gall-stone. When I returned the following morning I found the patient had passed a large gall-stone during the night and was able to be around attending to her usual duties. She continued the dioscorea for two weeks and has not had a symptom of colic or of ill-health from that time.

Case 2.—Miss M., aged 22, while lifting a tub of clothes was suddenly taken with a sharp pain in the right side which was greatly increased by attempts to take a full breath. Thinking that she had suffered some internal injury, she sent

for me. After making an examination of her chest I was unable to discover any indication of pleurisy or of a deep seated sprain, but as in the preceding case a peculiar brownish or yellowish-brown discoloration of the skin was found to be present. On being given a looking glass the patient admitted that there was something wrong with her complexion. It was then my opinion that this was a case of sudden obstruction from a gall-stone and would furnish a good opportunity to further test the value of dioscorea. I directed the patient's mother to give her thirty to forty drops of the tincture every two hours, and left the usual directions about having the evacuations searched for gall-stone. The pain disappeared after the second dose of the remedy, and during the night she passed two good sized gall-stones. In neither of these cases was the discoloration so marked as to simulate or resemble jaundice.

Case 3.—Mrs. C., aged 45, after exposure to wet and cold was seized with a sharp pain in the right side. The next day her eyes and skin had a yellowish-green appearance. I was sent for and pronounced the case jaundice, due to the presence of a gall-stone in one of the biliary ducts. I ordered her 30 to 40 drops of the tincture of dioscorea every two hours. On returning in the morning I found her much improved and inclined to doubt the correctness of my opinion that she had jaundice, for, as she truthfully said, she "had never heard of anybody being cured of jaundice in a day." Notwithstanding this good lady's opinion, I believe that there are many cases of jaundice due to the arrest and detention of gall-stones in the ducts, which if treated properly may be dissipated as promptly as followed in this case.

Case 4.—Mr. A., aged 25 years, has been subject for several months to "bilious attacks," lasting for three days and characterized by violent frontal headache, great loathing for food and obstinate constipation. On applying for relief on Christmas eve, he stated that all his symptoms were aggravated by the knowledge that he would not be able to eat any Christmas dinner. I assured him that his fear was unnecessary, that the attack would be cut short long before the dinner was prepared. I directed him to take three 30-drop doses of the tincture of dioscorea during the evening and two compound cathartic pills on going to bed, and to resume the dioscorea in the morning. He returned about a month afterwards stating that the medicine had worked like a charm, and asked for some more to ward off another attack. I renewed the same prescription and he has not had the slightest headache or any digestive trouble since that time.

Case 5.—Mrs. D., aged 37, informed me that she was suffering from "cramps of the womb," due to falling of that patient and long suffering organ. She was without doubt having severe

pain as the expression of her face and the contortions of her limbs gave evidence, but doubting her ability as a diagnostician, I asked her how she knew the cramps were caused by her womb being out of place. She replied that she had similar attacks on two previous occasions, for which she was treated, and that the cause of her suffering was prolapsus or falling of the womb. She added that on the first instance she was in bed for two weeks, and on the second for thirteen days. I made a vaginal examination and found that the uterus was markedly prolapsed, but that it was also free from pain, and I therefore concluded that her opinion of the former attacks was incorrect, and the seat of the disease was in some other portion or organ of the body. Upon looking at the patient's countenance again I detected a slight yellowish discoloration which, as in the former cases, suggested to my mind a favorable biliary origin of the colic. The tincture of dioscorea was then ordered, in 30-drop doses, with the gratifying result of yielding complete relief within six hours and enabling the patient to get up two days afterwards and attend to her household duties. The evacuations were carefully searched for a week but no gall-stones discovered.

WHAT CAN WE DO TO INDUCE THE GOVERNMENT TO MAKE THE CEN- SUS OF 1890 CONTRIBUTE EFFI- CIENTLY TO A CLEAR CON- CEPTION OF THE CAUSES OF BLINDNESS.

Read in the Section of Ophthalmology at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY ROBERT TILLEY, M.D.,
OF CHICAGO, ILL.

The disinterested efforts which have been made by different individuals who have embraced the study of the healing art, for the general welfare of the race, will compare favorably with similar efforts made by any other section of the world's workers. Often these efforts have been made in the face of the wildest and most fanatical opposition, and practically always have they been confronted with appalling obstacles. It needs no mental acumen to perceive that in order to overcome successfully any evil we must know the nature of that evil, and according to our present experience we must know it in all its details. A disease which in some haphazard way disappears from our midst to-day will reappear at a place and time when we least anticipate it. But if we understand its peculiarities definitely we are not only in a position to try intelligently to suppress it, but also to try and abolish it entirely, or to successfully meet its future approaches. I am satisfied that if it were possible to get a complete

tabulation of the blind of the various countries of the globe a well-informed and well-balanced mind could draw very important deductions relative to many peculiarities of the various peoples. By a complete tabulation I mean a tabulation which should indicate not only the number of the blind, but also the various agents which have caused the blindness. One very peculiar and interesting fact has been strikingly illustrated by Dr. Hugo Magnus, of Breslau. Among the many interesting items in his excellent work, "*Die Blindheit ihre Entstehung und ihre Verhütung*," it appears that in Bavaria the census of 1840, 1858, and 1871, have shown that the Jews furnish a relatively greater number of blind than the Catholics, and that the Catholics furnish relatively a greater number of blind than the Protestants. He has further shown that the censuses of Prussia for 1871 and 1880 give corresponding results; namely, that in Prussia a given number of Jews furnish more blind persons than a corresponding number of Catholics, and a given number of Catholics furnish a greater number of blind than the same number of Protestants. I do not quote the actual figures presented by Magnus because my object is only to call attention to the item as one of interest in a census of the blind.

England and Scotland, in the census of 1871, furnish about the same relative number of blind, but a little in favor of Scotland. There can be little doubt that the relative number of Protestants is greater in Scotland than in England. Ireland, greatly in excess of England and Scotland, corresponds absolutely with the channel islands.

Comparing Ireland with itself, it is stated without further definiteness that the South of Ireland gives 17 blind in 10,000 inhabitants, whilst the North of Ireland furnishes only 9 in 10,000; not much more than one-half as many. The North of Ireland may in general be called Protestant.

If such figures as these are shown to exist throughout the various parts of the civilized world they certainly are of intense interest, whatever deduction we may draw from them.

Another item of interest which Magnus sets forth in detail in the book before referred to, is the number of blind from ophthalmia neonatorum. In a carefully prepared table giving the various causes of blindness in 2,528 cases examined by himself and other competent observers it appears that ophthalmia neonatorum contributed a larger percentage of blind than any other affection, namely, 10.87 per cent., and trachoma and blennorrhœa adultorum come next, with 9.49 per

cent. Without inquiring further these two affections thus contribute 20 per cent., at least, of the blind, and both of them must be practically considered as preventable diseases.

It is not improbable that these figures represent somewhat accurately the percentage which these affections contribute to the number of blind here in America. And when we remember that a case of blindness from ophthalmia neonatorum is a whole life-long affection, the seriousness of the affliction becomes apparent. According to the statistics of the lying-in establishments at Leipzig, which may be taken as a sample, in 1874 out of 100 infants 13.6 suffered from ophthalmia neonatorum, whilst in 1879 the proportion was 9.2 per cent. I remember, without being able now to cite the source, that a few years ago a report from one of the lying-in establishments in New York the proportion was about 10.7.

I have not at hand any definite and reliable figures showing the number of blind from this affection in the institutions for the blind in America. The principal reason why I have chosen to refer especially to this particular affection is because it affords an instance of the affection which of all others has been demonstrated to be the most favorably influenced by a system of prophylaxis. These prophylactic measures are well known to you and do not now concern me. What I desire to do is to induce you to make some effort to render the coming census of 1890 more complete relative to the general question of blindness. The importance of the question lies in the fact that it is only by an accurate estimation of the question that we can hope intelligently to modify its dire results. It ought to interest the moralist, it certainly must interest the political economist, the humanitarian and the physician. It certainly is not to the credit of any nation to have a relatively large number of blind among its citizens, and America ought to furnish a smaller number relative to her population than any other nation on the face of the earth. But it is useless to claim what ought to be, the only efficient means of estimation is to know what is, and the only means of intelligently profiting by the bare statement of the numerical fact is to know how it occurs.

I am aware that the tabulation of the blind with the various causes of blindness is a complicated and difficult question and that it cannot be accomplished by the general army which constitutes the census recorders. But that it is not impossible is shown by the efforts of some of the quiet workers of Germany—Katz, Magnus and Lackmann. That it is a work which cannot be accomplished by private individuals, and that it certainly would form a most valuable basis for a system of prophylaxis against blindness; that it would be a contribution to a kind of international hygienic and prophylactic exhibition; that it

[NOTE.—Were I trying to give an adequate conception of the disasters that arise from ophthalmia neonatorum it would be necessary to say that in twenty-two institutions for the education of the blind in different parts of the continent of Europe 40 per cent. of the inmates were blind from ophthalmia neonatorum.]

would furnish the physician, philanthropist, moralist and political economist facts relative to one of the world's greatest woes, should be stimulus enough to make the Government undertake the effort. Perhaps it is not to be expected that it could be satisfactorily carried out all over the United States at the first effort, but even if the effort was made in only a few populous and representative States, the interest and value of the work would be great. As has been previously stated, it is not for one moment supposed that the desired investigation could be accomplished by the ordinary census officers, all that could be expected from such officers would be a list of the names, ages, residences, nationality, religion, etc., of the persons afflicted, and the further work of technical classification of affections must necessarily be accomplished by men intimately acquainted with the nature of the diseases of the eye and ophthalmological phraseology. It would, moreover, be desirable that one recognized form should be used by all such tabulators. Magnus, of Breslau, has advocated just this work in his work referred to above, in reference to Germany; and to facilitate the matter he has drawn up a series of questions which leave very little, if anything, to be desired relative to simplicity, completeness and efficiency. I have translated this table without alteration, and will take the liberty to read it.

1. Name?
2. Age?
3. Religion?
4. Calling, before blindness; after blindness?
5. If a child, calling of father?
6. Parents related?
7. Parents' eyes affected?
8. Brothers or sisters affected with blindness?
9. Married?
10. Married before or after blindness occurred?
11. Husband or wife any affection of the eyes?
12. How many children with normal eyes?
13. Color of hair?
14. Color of the iris, when visible?
15. At what age did blindness occur in right eye?
16. At what age did blindness occur in left eye?
17. Condition of right eye?
18. Condition of left eye?
19. Cause of blindness in right eye?
20. Cause of blindness in left eye?
21. Grade of blindness in right eye?
 - (a) Total amaurosis?
 - (b) Quantative perception of light?
 - (c) Count fingers at 12 to 15 in. ($\frac{1}{3}$ m.)?
22. Grade of blindness in left eye?
 - (a) Total amaurosis?
 - (b) Quantative perception of light?
 - (c) Count fingers at 12 to 15 in. ($\frac{1}{3}$ m.)?
23. Was the blindness the result of a general affection?

24. Still affected?

25. Do any other conditions, important relative to the blindness, exist?

26. Did the blindness occur in the country or city?

27. How long a resident of the place before blindness occurred?

Such is the proposed list of questions which Dr. Magnus has formulated as a desirable list in order to give the investigation of the nature of blindness a uniform character. It would be difficult to modify the form in any scientific question without impairing its efficiency in some way.

It is not for us to suggest how such an investigation should be made. In order to be of value it should of course be accomplished within a short time of the general census returns; and if it could not be accomplished in all the States and Territories, it would be decidedly advantageous if it was done even but in a few States.

DR. J. L. THOMPSON, of Indianapolis, said: We should not be in too great haste in such a matter as this. Better by far teach the people, through the medical journals and newspapers, as to cleanliness and preventive treatment, than to resort to methods which, owing to the lack of time, gives to those whose duties concern the census taking have already been determined. Our country is vastly different from the older ones, being much more sparsely settled. Religion certainly has but little to do with the case. In the older countries in some quarters the Jews may have been more crowded, or possibly in the Catholic districts of Ireland and other countries the conditions of the people may not be as favorable as in other nations where the Protestants are often in affluent circumstances. Here eye diseases have been vastly increased since our internecine war, owing to the carelessness of returning soldiers communicating brachomatous inflammations to their families and friends by the use of the same towel, sleeping in the same bed, handling the same farming implements, etc. Educate the people, but let the Census Bureau alone. At least, as a Society, let us go slow about this matter.

Considerable discussion followed, in which Drs. Connor, Scott and Jackson took part. Finally it was moved and carried that a committee be appointed, by the Chair, to request the General Assembly to authorize the Section of Ophthalmology, together with the American Ophthalmological Association, to confer with the Census Committee. Drs. X. C. Scott, Robert Tilley and J. Chisholm were appointed on this Committee.

GEORGIA PHYSICIANS are agitating for an adjustment of fees. A meeting was held at Kingston to-day to advocate a universal fee bill.

A NEW PLAN OF TREATMENT FOR PNEUMONIA.

Read in the Section of the Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY G. R. MARTINE, M.D.,

GLEN'S FALLS, N. Y.

Every new theory is at first more or less ridiculed by the incredulous class, and the number of those incredulously inclined is unfortunately as large to-day as when Harvey discovered the circulation of the blood, or Jenner promulgated the boon of vaccination. Hence no surprise will be created should this new plan of treatment for pneumonia be derided, or even denounced in terms more vigorous than elegant. But still among you all there may be one patient investigator searching for truth, who will give this new theory a practical test; and if so, he will be induced to make a second trial; and when he ascertains that substantially it never fails, it will then become his fixed, permanent and unalterable practice in the treatment of pneumonia.

No attempt will be made in this paper to enter into an extended research or exhaustive analysis relative to the cause, pathology or results of pneumonia, or to discuss at length its different forms and phases. It is simply to a new plan of treatment toward which your attention is called, and to this point all efforts will be directed. Almost every known plan has been adopted in the treatment of pneumonia, and the new remedies have been eagerly sought after; first one and then another has played its rôle on pneumonia's stage with but indifferent success. Bleeding, vomiting, sweating, blistering, poulticing, depleting, stimulating, all local and all general plans of treatment have been faithfully and persistently carried out with marked thoroughness and perseverance; and yet to-day, after all the advancement made in the science of medicine, pneumonia, though a curable disease, stands second only on the roll-call of death. Shall we continue longer in these old ruts, with this appalling death-rate staring us in the face at every step, or shall we seek out a new and more rational plan of treatment?

The first abnormal symptom observed after the premonitory chill has warned us of pneumonia's approach, is the quickening of the pulse and the consequent increased flow of arterial blood. Now, if we could take a microscopic view of the minute arterial ramifications in the lung structure, we would discern in response to the law of causation, a distention of caliber in the arterial vessels in order to accommodate the augmented flow of arterial blood; and if we could then cast a glance at the veins, we would observe the plasma-layer rapidly filling with multitudinous white corpuscles, and the walls of the veins irritated by the friction of increased circulation would exhibit

here and there white corpuscles adhering to their tenacious sides, and finally penetrating their walls. A glance at the capillaries would show not only the white but also the red blood-corpuscles forcing their way through the overstrained capillary walls, until the surroundings became engorged by their extravasation, and the initiatory work of hepatization had commenced, for the comparatively large size of pulmonary capillaries, together with the fact of their not being supplied with vaso-motor nerves, render them easily dilatable under increased arterial pressure. Now what are we to do at this stage of the disease in order to hold in check this increased flow of blood to the lungs, which, if unrestrained, is sure to end in consolidation and death. Reducing the temperature will not accomplish the work. Reduction of temperature does not save in pneumonia as in idiopathic fevers. To what plan, then, shall we resort in this exciting emergency to save the patient from being suffocated by his own blood? Before an answer is given, allow me to use a simile: Should some mischievous hand hoist the gate of an immense reservoir, located at an elevation a thousand feet above this city, and the maddened waters, fiendish with the power of inundation, should sweep through your streets, undermining block after block, and strangling all life within reach of its destructive course, would you not intuitively cry out, shut down the head-gate and save the city?

When the maddened blood, fired by the lash of inflammation, rushes wildly through the channels of life, extruding with demoniacal force through the very walls of the blood vessels the blood-corpuscles and threatening to strangle out the life of the unfortunate victim, intuitively I cry out, shut down not the head-gate but the heart-gate and thus save the suffocating patient who helplessly looks to you for rescue. Say to the wildly pulsating heart, so far or so fast shalt thou go, and no faster, and continue to hold the heart's action under absolute subjection until the crisis is past and the life of the patient is saved. (This crisis is usually reached about the seventh day after the chill.) This is not only what should be done, but what *must* be done, in order to ward off death. Here is where the new plan saves life. You will naturally ask if this new plan is intricate or difficult of adoption, or if it be so extended or complicated as to render it practically inoperative in the hands of the busy practitioner. The answer is, no. The whole method can be given in five words, viz: Hold the pulse below eighty. Keep your fever thermometer in your pocket; it is of little or no use in pneumonia. Death does not result from high temperature in pneumonia, but from high arterial action, resulting extravasation and consolidation and consequent heart failure. The physician who, dallying with his fever thermometer, endeavors to cure

pneumonia by reduction of temperature, will make about as much headway and will be about as successful as he would in trying to eat soup with a peg-awl. You may ask with what remedies do you hold the pulse at this point. While *veratrum viride* seems to have served me best, possibly there are other arterial sedatives which in the hands of others may act as well. It has heretofore been the practice of medical writers to name the medicines to be used in the treatment of such and such diseases, but in the light of the present day it would be well to drop this antiquated custom and adopt a new method by stating the indications to be fulfilled, the dangers to be avoided, the vantage ground to be gained, the favorable signs to be sought for, and the unfavorable symptoms to be controlled, the main points to be attained, and the results to be expected in the successful management and treatment of any disease, and then allow the attending physician to select such remedial agents as he may choose from among those possessing his confidence after long experience in their use.

In pursuance of this course no radical line is drawn or arbitrary rule laid down as to the remedial agents used, provided they are successful in accomplishing the work of holding the pulse below eighty if in adults, or if children, from one hundred to one hundred and twenty. This point attained and with persistent vigilance maintained, no further trouble need be apprehended, for with the pulse at or below eighty, there will be no extravasation, if no extravasation there will be no consolidation, if no consolidation there will be no hepatization, and if no hepatization there can be no suppuration, mortification or death. Hence pneumonia, by this plan, can be robbed of all its terrors.

But the inquiry may be made: What is there in this plan to provide against heart failure, a condition so greatly to be dreaded, and the reply is: It is far better to *avert* a calamity than to *provide for* one. No censure is due the captain of a man-of-war who thickly covers his deck with sawdust to prevent slipping when blood shall flow freely; but a higher meed of praise is accorded that captain who so carefully erects defenses, so skillfully plans the attack, so closely watches the progress of the battle, and so adroitly conducts the fight that but little blood need flow.

So in this new plan of treatment for pneumonia, but little blood will flow if the pulse be kept below eighty. If no blood be extravasated no consolidation takes place, and if no obstruction from consolidation exist, and the heart's muscular labor be not consequently increased by its continued efforts to force the blood through pulmonary channels already clogged and blocked, and provided further that the heart is restrained and thus relieved from the fatiguing additional labor of 2,000 to 4,000 contractions per hour

during the seven days preceding pneumonia's crisis, heart failure in uncomplicated pneumonia would be a thing impossible.

DR. H. A. HARE said that the use of *veratrum viride* was old and very useful, but that a great mistake is made in saying "use cardiac sedatives in pneumonia" without recognizing the fact that they are to be used in the first stage before congestion has gone on to consolidation. The man who gives such drugs at the middle or end of an attack of pneumonia might as well stab his patient. *Digitalis* is to be used at such times. As to the lethal results of *veratrum viride* let me say that very few cases of death are on record, owing to the vomiting which is brought on very early by the alkaloid *veratroidia* and an emetic resin. It is certainly the safest cardiac sedative.

DR. I. E. ATKINSON, of Baltimore, objected to the claim that the use of *veratrum viride* in the treatment was new; it had been many years under trial and had not received general acceptance. He called attention to the fact that Dr. Martine's graphic description of "drowning in their own blood" as the mode of death in many cases of croupous pneumonia could not be justified; that frequently the cause of death was in the failing heart action, a condition to which we could not look for benefits from heart depressants. He would not be much impressed by the successful results of giving *veratrum viride* in the croupous pneumonia of children, since this disorder usually will recover under any ordinary treatment.

DR. CRONYN said: Dr. Martine's new mode of curing pneumonia is not at all new. Bleeding and rasher emetics were the methods of our forefathers to attain the results pointed out by the doctor. We know very well that about forty years ago a complete revolution in the treatment of diseases generally, and pneumonia, was made the basis of argument particularly. I hold, sir, that every case of inflammation of the lungs must be treated upon its own merits, taking into consideration the constitutional condition. The peculiarities of such cases and the remedies are easily determined.

DR. C. O. PROBST, secretary of the Ohio State Board of Health, is sending out circulars to the mayors and councils of all the cities of that State that have not formed boards of health, urging them to do so. The law requires all towns having a population of five hundred or more to establish these boards. The circular says: "One of our smaller villages, which neglected its duty in this matter, is now paying the penalty in a severe epidemic which a board of health might have prevented."—*Sanitary News*, Sept. 7, 1889.

MEDICAL PROGRESS.

ACQUIRED LEPROSY, AS OBSERVED IN ENGLAND.—MR. JONATHAN HUTCHINSON believes that while the possibility of contagion in leprosy is universally admitted in what may be called the abstract, it is very doubtful whether it takes an important share in the spread of the disease; thus, lupus and cancer might be transferred from one person to another, but neither is contagious in a practical sense. In Norway, India and the West Indies nurses and surgeons do not fear to come into contact with lepers for years together. So far as *contagion* is concerned, hundreds of surgeons daily encounter the same risks that Father Damien did, but the latter exposed himself to other dangers as well—to those of food, for example. In England the most intimate possible contact with lepers has not been sufficient in itself to communicate the disease. The varieties of leprosy are the same the world over, in hot and cold countries alike, facts pointing to the inference that the cause must always be the same. In countries where leprosy has died out it has died out absolutely—not a single sporadic case ever originates in England. The cause for the spread of the disease must be sought in *food*; there is little room for doubt that it depends upon some very special kind of poison taken in connection with food. Such an hypothesis would cover all the facts, and none other would.

In connection with his opinions Mr. Hutchinson cites twelve cases which have come under his observation. These were all in patients of British birth. There was no inherited predisposition. In no instance had the patient been exposed to any degree of hardship or deviated from the ordinary conditions of well regulated life. In every case the acquisition of the disease had occurred in some country where it was prevalent. The patients must have received the specific contagion on some part of the skin or mucous membrane, or must have swallowed it in connection with food. All had, however, partaken of food common in leprosy districts, and if we incline to suspect that fish, and especially potted fish, is an ordinary vehicle of contagion, all had undoubtedly been exposed to this risk.—*Brit. Med. Journal*, Nos. 1,487 and 1,488, 1889.

THERAPEUTIC VALUE OF HYPNOTISM.—(From a paper read by M. BERNHEIM before the International Congress for Hypnotism, Paris, August, 1889.) The hypnotic state is that particular psychological state which may be produced and which increases, in varying degree, suggestibility—that is to say, the aptitude of being influenced by an idea that the brain receives and realizes. This is a definition more comprehensible than that generally employed, for to define hypnotism as an

induced sleep is to eliminate from hypnotism a class of cases with great tendencies toward suggestion and even hallucination, for there may be hypnotism without sleep.

I obtain some remarkable effects without sleep. I request the patient to close his eyes; I seek to make an impression on him—to make his mind captive, and I affirm the disappearance of certain functional troubles. This is suggestion by word without hypnotism. Sometimes the suppression of a functional trouble or an acute pain may be accomplished instantaneously either permanently or temporarily; at other times it is only gradually brought about at the end of a number of *séances* depending upon the nature of the trouble and the degree or character of the suggestibility. Hypnotism does not enjoy a monopoly in *suggestion*; the latter may be produced by other means, it has been practiced in all times by physicians with better or worse intent. Purgation by pills of bread-crumbs, the cure of fits by fear of the police, sleep induced by the peroxide of hydrogen, the miraculous water of Lourdes, the practices of the touchers and the masseurs, those of hydrotherapy, metallotherapy, electrotherapy, the secret ointments, the granules of Mathei, homœopathy and the suspension treatment of patients with tabes, all act in part or whole through suggestion. Doubtless hydrotherapy and electrotherapy have of themselves an incontestable action upon the functions of the organism, but this action is not well understood; the assertions of the authors regarding the therapeutical value of the various methods are vague and contradictory for the reason that no one has taken pains to first disengage the element of suggestion.

I often have success with the use of electricity in the treatment of neuralgias, rheumatism, lumbago, nervous aphonia, etc., when I fix my patient's attention closely upon the effects obtained under electrization and tell him that his symptoms will disappear. Electrization with suggestion sometimes succeeds where suggestion alone fails. One of my patients had suffered for months from extremely severe lumbar and sciatic pains. Electrization with suggestion (the vigil state) caused disappearance of the pain at each *séance*, but only for a few hours. I then tried hypnotic suggestion, but with less effect. The patient expressed more confidence in electrization and said that hypnotism alone had no effect upon him. I returned to my former treatment with the result of obtaining a complete cure in two or three weeks.

In metallotherapy I have been able to discover nothing of value aside from the element of suggestion; I do not deny that it possesses other powers, but I have been unable to discover them. I have often applied various metals and magnets to the anæsthetic skin of hysterical patients without informing them of what I was doing, and without producing any effect. By applying the

metal, however, and saying to the patient or the assistants, "here is the metal or magnet which I wish to apply; in three minutes sensibility will return in the hand and in half of the forearm," I often obtain the desired result. The English seem to me to be right (at least in part) when they ascribe the therapeutical action to expectation. The treatment of tabes by suspension has made a great deal of noise lately. The surprising benefits obtained have been attributed to the changes produced in the blood-supply of the spinal marrow, as well as to the stretching of the nerves. From the very first I have thought that suspension is a method of suggestion. Numerous experiments of this sort, by myself and as well as others, upon patients suffering from ataxia and other varieties of myelitis, nocturnal incontinence of urine, and especially the various forms of neurosis, have led them to the same conclusion. The science of medicine endeavors to explain all the mysteries of life by mechanics, physics, and animal chemistry, but the mind is also a factor in the human organism; there is a psycho-biology and a psycho-therapy.

My final conclusion is that suggestive therapeutics rests upon the incontestible influence exerted by the mind upon the body. Its influence upon digestion, nutrition, respiration, circulation, and upon the secretory or excretory functions, is well known, for all the organs, all the functions are in anatomical and physiological relation with the cerebro-spinal nerve centres. Every cerebral cell influenced by an idea tends to realize this idea through the agency of the nerve fibres. The idea becomes an act. Upon this physiological fact is based the psycho-therapeutics of suggestion.

The hypnotic state itself produced by suggestion increases suggestibility by suppressing intellect and augmenting cerebral automatism. It is faith that saves, and the most incredulous people have a faith (I do not say a religious faith); they are no more able to escape from it than they are able to escape from the hallucinations of their dreams. Credence (I do not say credulity) is inherent in the human mind, and thus it is that the human mind becomes a master workman in miracles.—*Le Bulletin Médical*.

THE PROPHYLAXIS OF TUBERCULOSIS.—Last year a congress for the study of tuberculosis was held in Paris. At this meeting a permanent committee was appointed to formulate simple and practical instructions regarding the prophylaxis of tuberculosis. On behalf of this committee M. VILLEMEN has recently submitted a report which had already been approved by four professors of the medical faculty of Paris. The following is a brief summary of this report:

1. Tuberculosis is, of all diseases, the one which has the largest number of victims in the

cities, and even in certain country districts. In 1884, for instance, of 57,970 deaths in Paris, 15,000 were due to tuberculosis.

2. Tuberculosis is a virulent contagious transmissible parasitic disease produced by a microbe, the bacillus of Koch. This microbe, apart from direct hereditary transmission, finds its way into the organism through the digestive and respiratory tracts, and through wounds of the skin and mucous membranes. The propagation of tuberculosis may be prevented by well directed precautions.

3. The parasite of tuberculosis may be found in the milk, muscles and blood of the food animals. The use of raw and underdone meat and blood that may possibly contain the living germ of tuberculosis should be prohibited. Milk, for the same reasons, should be boiled before being used.

4. On account of the dangers concealed in milk the protection of infants, who are so easily attacked by tuberculosis, should attract the special attention of mothers and nurses. The tuberculous mother should not nurse her child. Cow's milk, when given, should always be boiled. There is less danger in giving ass's and goat's milk unboiled.

5. It is greatly to the interest of the public to assure the proper inspection of meat, as provided for by law. The only sure way to avoid the dangers of tubercular meat is to see that it is *thoroughly* cooked.

6. Inasmuch as the germ of tuberculosis may be conveyed from a tubercular to a healthy man by the sputum pus, inspissated mucus, and any object containing tubercular dust, it is necessary to bear in mind that:

1. The sputum of phthisical persons being the most dangerous agent of transmission, there is a public danger from its presence upon the ground, carpet, hangings, curtains, napkins, handkerchiefs, cloths and bedding.

2. The use of cuspidors by everyone should be insisted upon in all places. Cuspidors should always be emptied into the fire and cleansed by boiling water. They should never be emptied into rubbish piles, upon gardens, or where there is a possibility of infecting poultry, or even into water closets.

3. It is unsafe to sleep in the bed of a tuberculous patient, or to spend a great amount of time in the room of such a patient; least of all should young children be allowed to sleep in such a room.

4. Individuals considered as predisposed to contract tuberculosis should be kept away from localities frequented by phthisical patients.

5. One should not use objects contaminated by phthisis (linen, bedding, clothing, toilet articles, jewelry, hangings, furniture, playthings, etc.), except after suitable disinfection.

6. Rooms and houses occupied at watering places and resorts should be furnished in such manner that disinfection may be easily carried out after the departure of each invalid. It is the best plan of all to furnish rooms without curtains, carpets or hangings, to whitewash the walls, and cover the floor with linoleum.—*Bulletin de l'Académie de Médecine*, July 30, 1889.

IMMEDIATE TREATMENT WITH CURE OF LACERATIONS OF THE CERVIX UTERI. By MARY E. BATES, M. D.—The writer believes that there are insurmountable objections to suturing a lacerated cervix within a few hours of the termination of labor; first, because of the condition of the patient and of the wound; second, because of the difficulty of introducing the sutures; third, because of the dangers incident to the necessary exposure, and finally because of the impossibility of accurately determining the extent of the laceration. Operations made three or four months *post partum* present certain advantages which are not possessed by the late operations.

A few lacerations may heal by first intention without any special interference, though in the majority of cases involution and repair will not take place satisfactorily. In lacerated cervix the indications are to promote involution and repair:

1. By stimulating the pelvic circulation.
2. By cleansing the parts.
3. By keeping the edges of the wound in apposition.
4. By relieving the relaxed ligaments by supporting the uterus.

These desiderata may be secured by tamponing the vagina with antiseptic wool. This is to be introduced in such a manner as to keep the edges of the wound in close contact and give support to the uterus. The tampon may be left *in situ* for two or three days at a time, and should be reapplied two or three times. After the patient gets up the uterus should still be supported by tampons for at least two weeks longer. By these measures excellent union can be obtained and the processes of involutions be materially hastened.—*Southern California Practitioner*, July, 1889.

FRACTURED STERNUM WITH DOUBLE PLEURO-PNEUMONIA.—A man, 64 years of age, was admitted to the General Hospital, Birmingham, in the service of SIR WALTER FOSTER, on May 20th. Respirations were 58, temperature 103°; there was urgent dyspnoea and pains in both sides of the chest. An examination revealed a double-sided pleuropneumonia. There was dulness at the lower part of the chest and at the sides, together with bronchial breathing, crepitation, violent cough and thick tenacious expectoration. The lower part of the sternum from the upper border of the fourth costal cartilage moved with

each respiration, giving distinct crepitation. The patient had sustained a severe fall four days previously. Treatment consisted in strapping and the administration of stimulants and a mixture containing acetate and carbonate of ammonia and squill. By the eighth day the respirations had dropped to 44. On the 16th there was a fresh extension of the pneumonia at the left base. This attack passed off, and on the 21st he was free from pain. From this date he made a good recovery, and was discharged on July 11th, at which time the chest-walls moved fairly, the respiratory sounds at the bases were good, though accompanied occasionally by dry, creaking sounds. Union of the sternum had taken place.—*British Medical Journal*, Aug. 3, 1889.

TUBERCULAR MENINGITIS IN THE ADULT.—A man of 52 years, while apparently in the midst of health, had a profuse pulmonary hæmorrhage, followed by consolidation of apex of left lung, in 1887. Milk diet and creosote medicinally for eighteen months enabled him to gain markedly. Temperature during this time, about 99½°; expectoration scanty; increase in weight, 40 pounds. There was a recurrence of the hæmorrhage in July, followed by rapid formation of cavity at apex of left lung and profuse expectoration of pus. He rallied and resumed work after an interval. In March he suffered greatly from headache, with exacerbations on alternate days. Temperature, 105.3°. Nothing served to relieve pain or reduce temperature. After six days delirium set in at intervals. The respiration took on the character of the Cheyne-Stokes type, which continued until death, except as modified by the administration of atropia and strychnia. Convulsions and death eighteen days after the appearance of cerebral symptoms.—*N. O. Med. and Surg. Journal*.

THE PATHOGENY OF NEPHRITIS BY SELF-INTOXICATION.—E. GAUCHER reports, in the *Revue de Méd.*, No. 11, 1888, experiments made on guinea-pigs with leucin, tyrosin, kreatin, kreatinin, xanthin, and hypoxanthin. Subcutaneous injection of these substances produced (like mineral substances: mercury, phosphorus, arsenic, etc.; and vegetable substances: oxalic acid and fuchsin, as proven before by the same author) in every case a nephritis of the epithelium which led to granular fatty degeneration especially of the epithelium in the tubuli contorti. The author warns against giving food rich in extractives (bouillon, meat-extracts, meat-powders, etc.) in all cases where with a disturbed digestion the transformation of azotic nutriment occurs imperfectly, as a nephritis threatens from overburdening the organism with such extractives.—*Centr. für Klinische Medizin*, No. 23, 1889.

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EXTRACTION OF CATARACT WITHOUT
IRIDECTOMY.

A careful perusal of the comparatively short but eventful history of cataract extraction, will not only repay the reader for his trouble, on account of the interest inherent to the subject, but will also put him in possession of certain facts regarding this operation which will prove of special interest at the present moment, when the question of modifying the usual method of operating is agitating the minds of ophthalmologists.

The history of an operation is the record of men's experience therewith. Therefore when the surgeon is invited to set aside an operative procedure by which he obtains good results, and to adopt a modification of a once discarded operation, it behooves him to turn to the pages of its history, so that he may profit by the accumulated experience of others. The record should be carefully reviewed and the reasons for its having been discarded thoroughly studied. The causes of failure in the past should be examined in the light of our present knowledge, and whether any discovery has been made by which the obstacles to success can be surmounted, is not only a most pertinent question, but one which demands a satisfactory answer.

If the annals of ophthalmic surgery are consulted it will be found that up to the middle of this century the operation for cataract most generally performed was the classical "flap extraction," without iridectomy. It is undeniable that when this operation was entirely successful the result was in every respect all that could be de-

sired. The corneal scar was hardly perceptible, the iris retained its normal form, and the patient, once being rid of his opaque lens, looked through a round and movable pupil. Nothing more could possibly be demanded of ophthalmic surgery. Unfortunately the number of perfect results fell far short of what was desirable. The large corneal flap was apt to suppurate, leading to the total destruction of the eye. The iris, which was oftentimes badly bruised during the expulsion of the lens, frequently reacted, giving rise to harassing iritis, and entailing the contraction of the pupil, with loss of motility and of its regular form. But the great disadvantage of the procedure was the danger of prolapse of the iris. In many instances the result of a perfectly smooth operation, giving promise of a brilliant outlook, was marred by a prolapse of the iris supervening, perhaps, two or three days after the operation, from a fit of coughing, or some other effort, and sometimes without any apparent cause. In some instances the performance of an iridectomy succeeded in setting free the entangled iris, but in the majority of cases the patient was sent out carrying in his eye a source of irritation which constantly menaced the integrity of the organ.

To obviate these difficulties Gibson and Travers, in the early part of this century, tried to extract certain forms of cataract through a small linear incision; Bowman and von Graefe, simultaneously, although independently, revised this method toward the middle of this century, adding one more step to the operation—the removal of a small portion of the iris. Finally, the mastermind of Graefe, perceiving that each operation offered certain advantages, and that neither was adapted to all cases, devised, and then gave to the world, the "modified linear extraction," which did away with the disadvantages of the old flap and the linear extraction, and combined the advantages of both.

The result was most satisfactory along the whole line of operators. Even those who had performed for many years the old flap extraction, securing its occasional brilliant results, reluctantly gave way before the obvious advantages of the new operation, and went over to the ranks of its advocates. The reason for this unconditional surrender is not to be sought, however, in any alleged perfection of the method, for its subsequent history revealed that the operator had to

encounter other dangers, such as the escape of vitreous when the incision was made too far into the sclerotic; but the reason for its general adoption is to be found in the fact that it eliminated almost entirely the two prevailing sources of failure in the old operation, viz.: suppuration of the cornea and prolapse of the iris.

The operation was not destined to live long in its original form. Notwithstanding the acknowledged advantages ensured by the iridectomy, the eyes of some ophthalmologists turned back with longing toward those round, movable pupils obtained in the good old days of flap extraction. Soon the incision began to travel more into the cornea, and every effort was made to do away with the defacing iridectomy. Modification followed modification in rapid succession, so that after a few years all that remained of Graefe's original operation was the knife. Finally a calm ensued, during which the merits of all these modifications were thoroughly tested. The majority of ophthalmologists, perceiving that Graefe's claims were satisfactorily sustained by experience, gradually settled down to perform extraction with iridectomy, limiting their modifications to slight deviations from the original form and seat of the incision. A few operators, however, have from time to time made desultory efforts to banish iridectomy, but within the last two or three years there has been a well-defined movement in this direction. The proposed operation is known as "simple extraction."

As this movement is led by some of the most distinguished ophthalmologists in Europe and America it is bound to command attention, and to exert great influence. Furthermore, some of its advocates are most enthusiastic, and their claims are in some instances supported by carefully prepared reports. To gainsay the statements made by such men is, in a sense, to stand condemned in one's own words. Yet it is unquestionably true that a calm, dispassionate examination of the merits of simple extraction, which, after all, is but a modification of the old flap operation, does not reverse the verdict of the past. It is quite true, that the advances made in antiseptic measures have greatly diminished the dangers of suppuration of the wound, but the proposed improvement over the "combined operation," does not depend so much on the form of the incision, as it does upon the banishment of

the iridectomy. And in this particular no advance has been made which will help us out of the old difficulty. The surgeon's control over an eye ceases when the bandage is applied, and the worst cases of prolapse occur after this time. It has been suggested to leave the bandage undisturbed for six days, and to restrain the patients more to their beds, but notwithstanding all these precautions the dreaded "*bête noire*," as Critchett used to name prolapse, will occur, and an anterior synechia is universally recognized as a most undesirable complication.

That removal of lens without performing iridectomy (thus securing a round, movable pupil) is the goal to which every experienced oculist should direct his steps, is undeniable. But the road to this goal is full of pitfalls and difficulties. Hence a note of warning should be sounded for those who have not acquired sufficient experience in ophthalmic surgery to realize the dangers which lie ahead. It requires a most experienced eye to discover when a lens can be extracted without iridectomy, and further, it necessitates a nicety of manipulation acquired only by years of practice to thus accomplish its removal. Let simple extraction then take its place as the ideal operation, but let us bear in mind that like many other ideals it is not always practicable. The modified linear operation, as performed to-day, offers inducements, both in safety of procedure and in brilliancy of results, which cannot be denied, and which should not be underestimated.

Many distinguished ophthalmologists who had discarded iridectomy have returned to it, experience having taught them that it is safer in the long run. It therefore behooves the *expert* operator to weigh the evidence most carefully—the *beginner* should unquestionably adopt the method which on the whole offers the best assurance of success.

LEPROSY IN NOVA SCOTIA AND NEW BRUNSWICK.—Dr. Smith, the medical attendant of the Tracadie Leper Hospital, New Brunswick, having been commissioned by the Canadian Agricultural Department to make inquiry concerning suspected cases of leprosy reported in Nova Scotia, fully confirms the diagnosis. It is also reported that there are a considerable number of other cases believed to exist in the northern part of the province.—*Brit. Med. Journal*.

AUTO-INFECTION FROM THE PRODUCTS OF GASTRO-INTESTINAL FERMENTATION.

There is a large and important class of cases, examples of which are constantly coming under the observation of the general practitioner, sometimes under one guise, sometimes under another; at times bearing clinical aspects of familiar appearance, again presenting an array of symptoms without apparent interdependence and exhibiting manifold functional disorders which seem to affect every organ of the human economy, and to spring from sources so well hidden as to baffle the quest of even the astute physician. These are the cases of that hydra-headed enemy of modern civilization, INDIGESTION. To compass etiology we are obliged to summon to our aid all the wisdom of physiology, chemistry and bacteriology. In our efforts at treatment we have already well-nigh exhausted the resources of materia medica and dietetics, and have little to fall back upon save hygiene—*id est*, common sense.

We can scarcely doubt—indeed, we have already admitted—that it is the Americans who have received the worst drubbing from this monster; and yet, at first blush, it would seem as though the United States, the granary and pasture of the world, with a population supplied with a greater variety and better quality of food than any other nation, would hardly be this monster's favorite victim. It might be said, indeed, that we have too great an abundance, and that we are suffering from the results of too much luxury and refinement in eating and drinking. But if sophistication in the preparation of food is a danger, it would seem that the French, with their culinary subtleties; the Germans, with their insipid steamed meat and stomach-destroying "*mehlspeisen*," and the Italians, with their garlic and oil, ought all to come in for their full share of punishment. The truth of the matter is, doubtless, this: The Americans are no more indiscreet in what they eat and drink than are the other nations. The difference is rather to be found in the *way* they eat and drink, and in the manner of their life; in other words, the hygiene of European life is, in many respects, more rational than ours. In European life there is less hurry, less anxiety, less precipitation, and more of out-door life and physical exercise. Even their habits of drinking are less injurious than ours, for they rarely drink beer or wine or liquor

except at meal times. In fact, were it not for the abhorrence that the continentals exhibit for fresh air within doors, one might say that nearly all their hygienics are superior to our own.

Fortunately enough for the great army of "dyspeptics," the work that has been done in the study of the causes and treatment of the disorders under consideration (and certainly in no department of medicine has more been done than in this) has borne rich fruits; and especially may we congratulate ourselves in the development of the facts elicited by the aid of bacteriology. From the chaos of dyspeptic symptoms we have learned to differentiate, more or less accurately, certain complex uses of disordered function which supply us at once with the keynote of etiology and the guide-post to rational treatment. The modest general practitioner, who has hitherto feared lest he might tread upon the toes of the redoubtable neurologist, is beginning to learn that it is really the latter who has all along been trenching upon the general practitioner's own favorite field. Auto-infection has now come to explain to the general physician much that has hitherto been a perplexing puzzle to him. Brunton has drawn attention to this matter in the following striking expressions: "Perhaps we are not yet sufficiently alive to the important results produced by the absorption from the intestinal canal of substances generated in it by fermentation, or imperfect digestion. We recognize the danger of breathing gas from a sewer, but probably we do not sufficiently realize that noxious gases may be produced in the intestines, and, being absorbed into the circulation, may produce symptoms of poisoning."

An excellent illustration of this thought is found in a recent contribution to the *New York Medical Journal* on "Nervous Symptoms Caused by Functional Gastro-intestinal Disorders," by Drs. W. W. VAN VALZAH and CHAS. R. CRANDALL. To a very interesting report of such a case these writers have added an able analysis of the underlying causes, together with the rational indications for treatment in this and similar cases. The patient in question was a typical one of a class, a middle-aged American gentleman, a lawyer by profession, and a member of Congress. Of neurotic ancestry and of nervous temperament, the excitement and strain of such a career as he chose, and a moderate disregard of the ordinary

laws of hygiene, was all he needed to become what he was—a constant sufferer, tormented by a great variety of aches and pains. Even in boyhood and early manhood he was a martyr to indigestion, as well as the victim of numerous acute diseases. In the full tide of his activity his business affairs were interrupted by frequent breakdowns, requiring him to discontinue work and resort to watering places and take extended journeys in the interest of his health. He suffered greatly from insomnia, nervous irritability, inability to concentrate his thoughts, pain and burning sensations in his limbs, distress after taking food, acidity, flatulence, grinding sensations in the stomach and bowels, constipation, etc. A physical examination also revealed a gaseous distension of the stomach and intestines, the presence of yeast ferments in the blood, and of phosphates and bile in the urine, which showed a specific gravity of 1.030. The treatment instituted and faithfully carried out consisted almost entirely in altering the hygienic conditions of this man's life. He was placed in the midst of healthful mental and moral surroundings. To these were added rest, freedom from all sources of irritation, baths, massage, moderate exercise, and a suitable diet, which consisted in the withdrawal of fermentable food, including all sweet, starchy and greasy articles, all fruits and vegetables, and everything containing acids. His diet was almost entirely one of animal food, composed mostly of beefsteak and the muscle pulp of beef prepared by a machine made for the purpose. Meanwhile frequent examinations were made of the patient's blood, urine and feces. Later on, when a less restricted diet was enjoined, he was allowed to gradually add stale bread, a small quantity of milk, then a little game, and finally some vegetables. Tea, coffee and stimulants were all prohibited, and he was required to drink a pint of hot water one hour before each meal. As regarded the use of purely medicinal agents, such were administered as tended to give tone to the nervous system, stimulate the digestive organs to better action, aid the digestion of food, and induce rest to the nervous system. The particular ones chosen were cinchona, nux vomica, damiana, salicin, cascara, pepsin, bromides, and sulphonal. Under this treatment, in a single month, the patient passed from constant wretchedness to a state of entire comfort. After three

months of such treatment he returned home, not cured, indeed, but on the high road to health.

It is by such thorough examinations of our patient's condition, and by such rational application of the simple remedies which, when judiciously employed, possess so great a potentiality for good, that we may hope to obtain success in the treatment of digestive disorders when once they become fairly established. But in this, as in most other diseases, the best of all treatment is the prophylaxis, and here it is the wives and daughters who are the real physicians; and it is our firm belief that until the domestic arts of the kitchen and dining-room attain a rank of dignity among the other accomplishments, until they are taught very much as music and painting are taught, it is going to fare pretty badly with all of us.

THE PHYSICIAN AND HIS JOURNALS.

There is an ever present tendency among men, in a sort of vague and misty way, to venerate the past; in a way quite egotistical to magnify the present, and also to compass the future with grandiloquent interrogations.

To the first and third counts we plead not guilty—but to the second we enter our confession, since a simple statement of facts can hardly seem to those in other lands other than most notable exhibitions of egotism. When we come to enumerate the medical practitioners in the United States, the number of our medical schools and their improved facilities for teaching, the rapid development of medical societies and the numbers of medical journals that are in demand, we submit that the parallel is not to be found in the past or present history of any nation. If any one has doubts upon this subject we commend to him the simple study of statistics. Again, there never was a time when in this and in other lands there was such an array of talent applied with utmost tension, to medical investigation. There was never a time when there was so much of original discovery, and never before such facilities for rapid advances in medical education. There never was a time when medical journalism was so enterprising as now, nor its pages so filled with valuable instruction, and there never was a time when a physician could so soon fall behind and be lost sight of as now. A single year's neglect will

render his needs conspicuous. Only the most industrious and critical readers are fully abreast of the times, and in the hour of need and of their opportunity how quickly these come to commanding prominence.

If all these facts be true, how can we do otherwise than by their simple statement magnify the present? If they be true it is obvious that to the well informed physician his journals are as essential as is his daily bread. And while making his selections, will he pardon if we make one or two suggestions.

We believe that a first duty of the medical man is to help develop, foster and sustain the medical societies and medical interest of his own locality. He has power personally to stimulate his associates and to aid them in organization and in medical progress. In the development of such local interests nothing can be so helpful as the ably conducted and well supported local medical journal. To this he owes a primary obligation, both literary and pecuniary. Its pages should be replete with the recorded experiences of local contributors while, in turn, it should garner for them the best of medical productions from all lands.

To the physician in quest of his second journal we respectfully commend the value and the claims of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. While it is National in its relations and circulation, it will seek to further his local interests. It will give a continued series of valuable original papers, prepared and submitted by the leading men of the profession, at the annual meetings of the American Medical Association. It will give prominence to translations of the best literature published in foreign languages, and copious selections from the best writings at home and abroad. It will devote itself to the dissemination of clinical instruction, and to the presentation of condensed reports of the proceedings of prominent medical societies. These, with the work of a corps of editorial writers widely representative of the American States, constitute our claim to the second place on the physician's list of medical journals, to which he should add as many others, home and foreign, as he can *thoroughly utilize*.

BUTCHER-SHOP REGULATION.—The Municipal Council of Paris has ordered that the débris of butcher-shops shall be removed before daybreak.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

The fifteenth annual meeting of this Association was held in the city of Evansville, Ind., September 10, 11 and 12. The Committee of Arrangements had made ample provisions for every need and their work seemed perfect in every detail.

The meeting was one well representing the leading men of the Mississippi Valley and was conspicuous, *first*, for the absence of any excessive convivial spirit; and *secondly*, for the earnest purpose with which, from first to last, the members applied themselves to solid scientific work. Of the eighty-three papers which had been prepared for this meeting seventy-one of the writers were at hand to present them in person. Owing to the admirable tact of the presiding officer not a moment was lost. The papers followed in quick succession. The discussions which they elicited were as conspicuous for their aptness and force as were the papers themselves.

It may seem to the members of our Association in other portions of this broad land that THE JOURNAL is according undue prominence to this particular organization; in answer to which we wish simply to say, that wherever, or whenever an association shall so manifest its interest in, and its loyalty to, the American Medical Association as does this, and command within itself such elements of strength and culture, THE JOURNAL will be only too glad to recognize its claims and, as in this instance, to further its interests in every possible way.

Our regret is, that in connection with the publication of Association papers the pressure upon our columns will not permit the solicitation of a number of those there presented, for a like purpose. Our cotemporary journals, it is hoped, will afford ample and adequate facilities for their dissemination. In the present issue we give, as fully as our space will permit, an outline Report of the Proceedings.

EDITORIAL NOTES.

HOME.

THE DELAWARE HOSPITAL.—The corner stone of this hospital was laid by the Masonic Grand Lodge on the 17th ult. Dr. L. P. Bush, President of the Hospital Board, in his address said that "had the desire of the physicians of Wil-

mington been carried out there would have been a place long ago to which the sick and wounded of our city who were in need of assistance could be taken. But it is a happy event which has brought us here to-day to attempt to supply the deficiencies of the past and to help to wipe away whatever of odium may have rested upon the reputation of our city by this neglect."

The building will be ready for occupation before the close of the year. The present structure will be added to from time to time. A copy of *THE JOURNAL*, together with a copy of each of the local papers, the *New York Herald* and *Philadelphia Press*, were placed in the foundation stone.

NEW YORK MEDICO-LEGAL SOCIETY.—At a meeting of this Society held at the Hotel Buckingham last Wednesday the following papers were read: "The Hygiene of Interments," by Dr. C. A. F. Lindorme, of Florida; "Classification of the Varieties of Insanity," by Dr. Joseph Jones, of New Orleans, La.; "Résumé of Recent Trip to Europe," by Clark Bell, Esq.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION will hold its next session at Nashville, Tenn., November 12, 13 and 14, 1889. The preliminary programme contains a list of thirty-five papers by eminent physicians from the North and South.

DR. SAMUEL WOLFE, of Skippack, Pa., will fill the Chair of Physiology at the Medico-Chirurgical College of Philadelphia during the coming year.

APPOINTED PROFESSOR OF PATHOLOGY.—At the last meeting of the Faculty of the Medico-Chirurgical College, Philadelphia, Dr. Ernest Laplace was appointed Professor of Pathology. Professor Laplace is a native of New Orleans and a graduate of the Literary Department of the Georgetown University, D. C. After several years' study in Tulane University and the Charity Hospital he went abroad and graduated in the Faculté de Médecine de Paris, where he studied under Pasteur and Cornil. He afterward spent several months in Vienna under Billroth and Stricker, and a year in Berlin with Koch and von Bergmann. While with Koch he discovered the superior efficiency as a germicide of acid sublimate of mercury and the sulpho-carbolic acid as a disinfectant. After his return to New Orleans

he instituted a Pasteur laboratory for the treatment of hydrophobia, and was elected visiting surgeon to the Charity Hospital. At the time of his call to Philadelphia he was Professor of Physiology and Hygiene in the High School Department of the Tulane University, and Demonstrator of Microscopical Anatomy and Bacteriology in the Medical Department of the same school.

HOSPITAL BEQUEST.—By reason of a bequest made by Mr. Wm. Thaw, one of the wealthy citizens of Pittsburg, the sum of one hundred thousand dollars is appropriated for the benefit of the hospitals of that city.

FOREIGN.

THE INTERNATIONAL CONGRESS of Hydrology and Climatology will open at Paris October 3, 1889. Numerous excursions to points of interest are among the features offered for this occasion.

A SCIENTIFIC MISSION.—Dr. Viault, Professor of the Medical Faculty of Bordeaux, has been charged with a mission to the high plateaus of Peru and Bolivia, where he is to continue the experiments of Paul Bert relative to rarefied air.—*Le Bulletin Médical*.

ANTISEPTIC PROPERTIES OF TOBACCO SMOKE.—Hajek, of Vienna, and Tassinari, of Pisa, have demonstrated by experiment that tobacco smoke destroys germs, and the former has found, by consulting statistics, that men who smoked were far less susceptible to infection than the remainder of the population during an epidemic of diphtheria. The *British Medical Journal* now endeavors to explain the latter fact, pointing out that the robust men who can tolerate large amounts of tobacco are the very ones who resist infection any way; it also advises non-smokers not to put their trust in the antiseptic pyridine of tobacco, and not to make themselves unwell during epidemics while attempting to habituate themselves to the use of the weed.

PHARMACY REGISTRATION IN FRANCE.—The Minister of Commerce has given notice that no pharmacist will be permitted to take his oath before reaching the age of 25 years, and in order to secure the rigid enforcement of this measure the university authorities have received orders to confer no diploma (without which young students are unable to establish themselves) until the proper age has been attained.—*Le Bulletin Médical*.

TOPICS OF THE WEEK.

THE INTERNATIONAL MEDICAL CONGRESS OF 1890.

As organizing committee of the International Medical Congress to be held in Berlin next year, Professors Virchow, von Bergmann and Waldeyer have issued the following resolutions: The Congress is to be opened on August 4 and closed on the 10th. It is to consist of diplomated physicians and surgeons who have registered themselves as members and have taken tickets of membership. The registration fee is twenty marks, and each member will receive a copy of the Transactions. The purpose of the Congress is purely scientific, and its business will be transacted in Sections. The Committee of Organization will cause the definitive officials to be elected in the first sitting of the Congress—namely: a President, three Vice-Presidents, and an indefinite number of honorary Presidents and of Secretaries. In the first sittings of the various Sections a President and a sufficient number of honorary Presidents will be elected, the latter to preside alternately with the former. Owing to the difference of language, a sufficient number of Secretaries will be appointed from among the foreign members. After the Congress the Transactions will be edited and published by an Editing Committee appointed by the presiding officials. The general sittings are intended for debates regarding the work and general relations of the Congress, and for addresses and communications of general interest. Such addresses are to be delivered only by members requested to do so by the Committee of Organization. Proposals relating to the work of the Congress must be made to the said Committee before July 1, 1890. The Committee will decide whether they shall be adopted or not. All discourses and communications in the general and in the Sectional meetings must be delivered to the Secretaries in writing before the close of the sitting. The Editing Committee will decide whether and in what compass these writings are to be printed in the Transactions. The official languages used at all meetings will be German, English and French. The by-laws and programmes will be printed in all three languages. It is permitted, however, to use another language at the meetings for brief remarks, provided that one of the members present undertakes to communicate the meaning of such remarks in one of the official languages. Introductory discourses in the Sections are to be limited, as a rule, to twenty minutes; in discussion only ten minutes are allowed to each speaker. Students of medicine and other persons of both sexes who are not physicians, but feel interested in the debates, may be invited by the President, or may receive permission to attend the sittings.

THE FOURTH INTERNATIONAL PRISON CONGRESS.

Over and above its great interest to the student of State Medicine, this Congress, which is next year to meet at St. Petersburg, will have special attractions for the Englishman. Coinciding as it does with the centenary of John Howard's death, it will be utilized for the bestowal of international honors on that noble philanthropist.

The Government of the Czar, bearing in mind the fact that it was on Russian soil—at Kherson in fact—that Howard met his death in 1790, desires to show its appreciation of his philanthropic work by offering a prize for the best monograph on "The part filled by John Howard in the History of Penitentiary Reform." Competitors must write in the Russian or French language, and their work must include a biography of John Howard and a review of his publications; a characterization of penitentiaries at Howard's time, and a full list of all the innovations completed or proposed by him in these institutions; an estimate of Howard's influence on the subsequent course of penitentiary reform; and a bibliography of all his writings. Competing monographs must by May 1st (*i. e.*, according to the Russian almanac, the 15th), 1890, at latest, be in the hands of "The President of the Organizing Committee of the Fourth International Prison Congress at St. Petersburg." They must be furnished with a motto, and accompanied with a sealed letter containing the writer's name and address. The jury which will examine the monographs will be selected by the Congress itself, and it will award two medals of gold, a larger and a smaller, as well as silver medals and certificates of honorable mention. The competitor to whom shall be adjudged the larger gold medal will also receive 2000 fr. (£80), and his monograph will be inserted in the Proceedings of the Fourth Congress, while he will also have the right of reprinting it. All competing monographs, whether printed or in writing, which have not been withdrawn within two years by their authors are to be destroyed; and, lastly, the result of the Competition will be published in the Bulletin of the International Penitentiary Committee, and also in the Proceedings of the Fourth Congress. Besides the above-mentioned competition, there will be another at the instance of the conductors of the *Prison Discipline Review*. Its subject is the following: "What in the most civilized nations has been the historical development of the institutions relating to the correctional education of minors who have been convicted of crimes at common law, or who have been put in custody for idleness and vagabondage, or with a view to paternal discipline?" The conditions of the competition are identical with those of the preceding, except the following modifications. The competing monographs, in writing or in print, may be written in any language, but there must be a French translation of the same appended. The successful competitor will receive as prize the sum of 2000 francs (£80) from the conductors of the *Prison Discipline Review*. The Organizing Committee of the St. Petersburg Congress will be entitled to publish the successful monograph in the Proceedings of the Fourth Congress, while the author, will, at the same time have the right of reprinting it.—*The Lancet*.

THE INHALATION OF DUST.

DR. KUNZE, in his inaugural thesis for the M.D. degree in the University of Kiel, publishes as a contribution to the diseases caused by the inhalation of dust a series of examinations of lungs so affected. In all these dust was-

found microscopically, and after chemical tests in the various anatomical and histological parts of the lungs and in the interior of the lymphatic vessels numerous leucocytes were found covered with the dust. Being arrested in its progress, it causes inflammation producing hyperplasia of connective tissue, especially where a dense network of lymphatic vessels exists. Dr. Knuze also proved that the degree of alteration in so-called "dust lungs" depends not merely on the quantity of the dust inhaled, but also on its greater or less morphological power of injuring the tissue. He concludes from his experiments that even the greatest alterations in these lungs—such as nodes, indurations, and vomicae—are mainly produced by the inhaled dust, and that tuberculosis is only an occasional coincidence. The least serious alterations in the lungs resulted from the inhalation of lamp-black, the particles of which are very fine and little injurious; the most serious, from dust inhaled by earthenware manufacturers and stonemasons. The lungs of a locksmith showed only a moderate hyperplasia of connective tissue, the dust consisting partly of the finest particles of iron. In a worker in oxides of iron the lungs were found full of small granules, and the morbid changes in the tissues were very considerable. The lungs of gold miners were generally indurated and atrophied; the dust in these cases is exceedingly fine. Sand produced numerous circumscribed hard nodules and thick indurations. In cloth manufacturers, the lungs, in spite of their contact with an enormous quantity of organic dust, presented but few indurations. In the lungs of two stonemasons induration and tuberculous disintegration were observed; all the other lungs were entirely free from tuberculosis of any kind, an observation which was verified by the absence of tubercle bacilli in the muco-pus in the vomicae. —*Lancel.*

DISINFECTION.

The following practical remarks upon the important subject of disinfection are abstracted from an address delivered by FRANKLIN PARSONS, M.D., at the annual meeting of the British Medical Association at Leeds, in August, 1889:

For the disinfection of the discharges of the sick chemical agents must, as a rule, be used, though the discharges from the throat and nostrils in diphtheria and scarlatina are best received upon pieces of rag and burnt. It is of prime importance that infectious discharges should be disinfected immediately on being passed from the body, both because delay will give them more opportunity of causing mischief, and also because if the infected matter be mixed with a large quantity of other organic matters, as in a drain or privy, before the disinfectant is applied, the action of the latter will have to be exerted on a greater mass of material, and its effect will be *pro tanto* weakened; and the chances will also be great that portions of the infected material will escape its action. It is thought by some that germs of enteric fever, for instance, may long lurk unsuspected in defective drains and privies until some accidental circumstance, such as disturbance of the contents, brings them

into activity, and that many of the "sporadic" cases of this disease thus arise.

Of chemical disinfectants for the disinfection of excreta, corrosive sublimate is probably the most trustworthy and suitable for ordinary use. In its use, however, three precautions have to be borne in mind: 1. It is very poisonous, and hence, in order to avoid accidents (such as frequently occur with carbolic acid), the solution should be colored, as with permanganate of potash, sulphate of copper, or aniline blue. 2. It corrodes iron and other common metals, and is instantly decomposed by contact with them; hence it must be used in non-metallic vessels. 3. It forms with albumen an inert insoluble compound, but this may be prevented by acidulating the solution. A solution suitable for disinfection of excreta, clothing, etc., is made by dissolving half an ounce of corrosive sublimate with one ounce of hydrochloric acid and five grains of aniline blue in three gallons of water.

Chloride of lime is a useful disinfectant for excreta, but too strong a solution injures clothing. Carbolic acid is especially an antiseptic, retarding putrefaction, for example, in sewage, but a 5 per cent. solution is recommended by Koch by preference for disinfecting excreta and soiled linen of cholera patients. Creolin, a substance allied to carbolic acid, is said by recent experimenters to exceed it in destructive action upon spores of bacilli, at the same time that it is not poisonous to human beings. Permanganate of potash is an excellent deodorant, and has the advantage of not being poisonous. It is also, to some extent, a true disinfectant, but its action upon infective matter is much weakened when this is mixed with a quantity of other organic matter. Green copperas (ferrous sulphate) is a cheap deodorant, but, according to Koch, is not a disinfectant proper. Its habitual use for flushing sewers in time of cholera was strongly recommended by Dr. Budd, and was said at Bristol to have produced excellent results.

With regard to the disinfection of clothing, bedding, etc., used by the sick, it may in the first place be pointed out that for such articles as will stand it, boiling in water for say five minutes is an effectual means of disinfection. And since the infectious matters are not actually incorporated with the fibres of the fabric, but merely attached as dirt to their outside, there is reason to think that even a thorough ordinary washing will be a sufficient disinfection, so far as the articles themselves are concerned; but the infectious properties are transferred to the water in which they have been washed. The dangerous properties of such water are shown by the frequency with which cholera is contracted by those who wash the linen of cholera patients, and by cases like that at Moseley, recorded by Dr. Ballard, where an outbreak of enteric fever occurred among the persons drinking the water of a well into which had percolated the soapsuds in which the soiled linen of an enteric fever patient had been washed. To avoid such risks it is necessary that infected articles which are washable should be disinfected before being washed; this should, for obvious reasons, be done immediately on their being left off. Boiling might be used for this purpose, but boiling water in sufficient

quantity is not always at hand; and again, if soiled clothes are boiled, the coagulation of albuminous matters fixes stains in them and spoils their color. Hence it is more convenient to put the clothes to steep in some chemical disinfecting solution, of which a painful should be kept in readiness. A solution of corrosive sublimate is the best for this purpose, as, besides being the most effective, it has the advantage that it does not stain or rot the linen. When the grosser dirt has been removed by rinsing in water, the articles may be boiled.

Articles which cannot be boiled in water without injury, such as cloth clothes, blankets, and beds, are best disinfected by exposure to heat, and the experiments which I have quoted show that for this purpose a steam heat is preferable to a dry heat for several reasons, especially because a lower temperature and a shorter exposure suffice to kill infective organisms, and because a steam heat penetrates much more rapidly than a dry heat into bulky and badly conducting articles. Further advantages are that in a steam apparatus the temperature is approximately equal in all parts, that it can be accurately ascertained and kept constant at any required degree for any length of time—conditions which are essential to a good apparatus, but which are very difficult to obtain where dry heat is employed. . . .

As regards disinfection of food, no one would, I presume, willingly eat or drink articles that he knew to be infected. As, however, one cannot always guarantee the absence of infection in the viands we eat or the water or milk that we drink, it is satisfactory to know that boiling or thorough cooking may be trusted to secure complete disinfection. In the experiments I have quoted it was found that even the very refractory spore-bearing bacilli of anthrax were destroyed by one minute's boiling in water at 212° F., though certain non-pathogenic bacilli found in vegetables and milk require for sterilization a higher temperature or more prolonged boiling, a fact familiar to the housekeeper who makes jam. It is, doubtless, owing to the efficiency of cooking as a disinfectant that sanitarians in France and Germany, where milk is, I believe, always boiled before use, are sceptical as to the possibility of the propagation of infectious disease by that medium; whereas with us in England, where milk is drunk raw, epidemics of milk origin are a matter of almost everyday experience. On the other hand, trichinosis, so common among the Germans, who eat their ham raw, that it has to be guarded against by an elaborate system of microscopic examination of all slaughtered swine, is practically unknown as a human disease in England and France, where meat is always cooked. . . .

For house disinfection, fumigation with sulphurous acid or chlorine gas, the latter preferred, followed by thorough cleansing and scrubbing, removal of wall-paper and lime-washing, are to be recommended; but these processes, to be effectual, need to be carried out with more thoroughness than is frequently done. A difficulty often met with is to know where the inmates are to go while the house is being disinfected; and it would be useful for this and other purposes if sanitary authorities had power to provide refuges for people whom, although not themselves sick, it might be desirable to remove from their homes.—*British Medical Journal*.

SOCIETY PROCEEDINGS.

Mississippi Valley Medical Association.

Fifteenth Annual Meeting, held at Evansville, Indiana, September 10, 11 and 12, 1889.

FIRST DAY—MORNING SESSION.

THE PRESIDENT, DR. GEO. J. COOK, of Indianapolis, Ind., in the chair.

After the usual address of welcome the President made a few remarks, saying that on account of the large number of papers on the programme he would not present the usual Presidential Address.

The first paper presented was by DR. G. V. WOOLEN, of Indianapolis, on

NASAL DIFFERENTIATION.

The author arrived at the following conclusions:

1. The nares should not be regarded as a whole in relation to etiological factors.
 2. Their correct interpretation must be with regard to their anatomical and pathological characters.
 3. The regions of the inferior turbinates are the seats of hypertrophies which are the essential pathological factors of hay fever.
 4. The posterior tips of the inferior, and frequently middle turbinate are likewise the seat of hypertrophies which are the essential pathological factors of asthma and its congener.
 5. That this is true primarily because the sensory apparatus of these parts is essentially distinct.
 6. These products do not become factors in hay fever and asthma except there be a special dyscrasia.
 7. Other reputed causes of asthma are associated products of hypertrophic disease of the nares and may have led to confusion as to cause, and may possibly have been reported prematurely, if hypertrophy were not removed.
 8. The anterior tips of the middle turbinate are the seat of hypertrophic disease which produces much nerve disturbance which is attributed to various other causes.
 9. By pressure of these hypertrophies on the nasal nerves we get the chief results in neuralgias in the region of distribution of the first division of the fifth pair of cranial nerves, and by obstruction of the orifices of ducts of anterior ethmoidal cells and frontal sinuses this is greatly intensified.
 10. Thorough removal of these hypertrophic products is the only radical cure for these various affections.
- In the discussion that followed DR. WM. PORTER thought that clinically there were exceptions to the conclusions arrived at in the paper.
- DR. DUDLEY S. REYNOLDS said that many persons had hypertrophy of the turbinated bones

without asthma, and in many cases of asthma the excision of the hypertrophied tissue did not relieve the asthma. To say that any case of asthma or hay fever is caused by hypertrophy of the turbinated bones he considered an error.

DR. WOOLEN in closing the discussion said that in every case his theory had been found correct. It is not the *magnitude* of the hypertrophy but the fact that hypertrophy exists, that causes the disorders, and the thorough removal of every portion of the hypertrophic tissue was in every instance followed by complete recovery.

DR. J. M. MATHEWS, of Louisville, read a paper on

A SIMPLER METHOD OF TREATING FISTULA IN ANO,

and showed a fistulatome, a new instrument of his own invention, for use in certain cases where patients would not submit to operation by the knife. The instrument is used to dilate and straighten fistulous tracts, and carries a concealed knife which can be used if necessary.

DR. MURDOCK thought that but for a small and very select class of cases the instrument and method of treatment would be of little avail. The fact that the sphincter could not be put to rest was the chief objection to all non-cutting methods. If the sphincter can be divided and thorough drainage secured fistulous tracts heal as readily as any other.

DR. GRANT, of Louisville, thought that the use of ligatures was to be condemned, and in but few cases would the method of treatment of Dr. Mathews be of practical benefit on account of the lack of perfect drainage.

DR. WATHEN, of Louisville, differed in opinion as to the cause of non-union of fistulous tracts, viz.: the contraction of the sphincters. This is probably the cause of irritation, but certainly does not prevent union. The important point of securing primary union can almost always be secured by using the deep buried animal sutures, the same as the deep perineal suture. If the sphincter is thoroughly divulsed no division of the sphincter will be necessary in many cases. The pyogenic membrane must be dissected out and the parts thoroughly brought together, and primary union will occur.

DR. ARCH. DIXON, of Henderson, Ky., believed that the method of Dr. Mathews could not be compared with the advantages to be gained by the thorough use of the knife. The knife is the only radical cure.

DR. J. M. MATHEWS in closing the discussion agreed with the expressed opinion that the use of the knife constituted the best method of treatment, but there are many cases where the patient will not submit to the knife, and for those cases the method of dilatation and drainage had proved beneficial in many cases.

On motion the Society adjourned to 2 P.M.

AFTERNOON SESSION.

DR. A. S. BARNES, of St. Louis, read a paper on
THE ACCOUCHEUR AND HIS FORCEPS.

The author advocated the more frequent use of the forceps in difficult or delayed labor, believing that by their use the comfort of the mother and safety of the child are promoted. He never uses ergot after delivery and disapproved of the use of anæsthetics in labor.

In the discussion DR. W. H. WATHEN, of Louisville, asked as to the percentage of stillborn children in forceps cases. He had tried in vain to secure statistics on the subject. He believed that the statistics of Cæsarean section (93 per cent. of living children) were as good as those of forceps delivery.

DR. BELL said that there were two indications for interference with forceps, the danger to the mother and the danger to the child. The danger to the child can always be determined by the location of the fetal heart sounds. Real danger to the child should be the rule in every case for the use of forceps.

DR. MURDOCK, of Pittsburg, Pa., believed that forceps had contributed very much to the lessening of the pains of labor. Every physician should use them more frequently; even for his own comfort their use was justifiable.

DR. DIXON, of Henderson, Ky., thought that the number of cases reported, 128 per year for thirty-five years, was remarkable, and that the conclusions should be of value as to the statistics of stillborn children.

DR. BARNES in closing the discussion said that the use of chloroform complicated labor, that both the long and short forceps should be a part of the obstetrical armamentarium of every obstetrician, as by the use of the short forceps in many cases the woman could be delivered without change of position.

DR. B. MERRILL RICKETTS, of Cincinnati, read a paper on

PLASTO-COSMETICS IN SURGERY OF THE FACE,

in which he made three classifications: 1. Removal of malignant growths. 2. Correction of deformity due to the loss of parts from either congenital or traumatic causes, or from previous operations, or diseases of any kind, including pug nose and ptosis. 3. The removal of nævi, warts, moles, hairs, pigmentary deposits, cicatrices, alveola fistulæ, enlarged glands, or anything abnormal, other than malignant growths, that may appear on the face or neck. He spoke of the different operations now resorted to to correct the various kinds of deformity such as are indicated in this classification, such as thick lips, ears, lids, and alæ, the grafting of cartilage, skin and bone, electrolysis, the natural chlorides, and the substitution of various kinds of tissue.

The paper was discussed by Drs. I. N. Bloom, of Louisville, Ky., and G. H. Rohé, of Baltimore.

DR. S. E. MUMFORD, of Princeton, Ind., read a paper on

PERINEORRHAPHY—ITS IMMEDIATE OPERATION, in which the advantages of the early operation, not later than twenty-four to thirty-six hours after delivery, were clearly set forth.

DR. L. WORSHAM, of Evansville, believed that the immediate operation was of decided advantage in the majority of cases.

DR. JOSEPH EASTMAN, of Indianapolis, said there were at times conditions present which are impossible to operate immediately with success.

DR. BELL thought that in conditions of uræmia, œdema and the like, immediate operation for restoration of the perineum was not advisable. In his opinion the most frequent cause of laceration of the perineum was not the head, but the shoulder.

DR. W. H. WATHEN, of Louisville, believed that it was impossible for anyone to do a large obstetric practice without occasional ruptures of the perineum. He believed that the efforts to prevent rupture had been the cause of more ruptures than it had prevented. He advised in cases of complete rupture the use of the kangaroo tendon sutures.

DR. I. N. LOVE, of St. Louis, read a paper on

ANTIPYRETICS, ANALGESICS, AND SEDATIVES,

referring especially to antipyrin, antifebrin, and exalgin, as the most recent additions to the list. He prefers acetanilid (antifebrin) to antipyrin, and had most happy results from the use of exalgin.

DR. MUMFORD warned physicians against the use of antipyrin in the continued fevers, believing that its continuous administration was detrimental.

DR. SMYTHE, of Greencastle, Ind., insisted on the necessity of the high temperature being controlled by antipyrin, or some similar agent, to prevent fatty and parenchymatous degeneration taking place as a result of high temperature. He believed that the continued use of acetanilid and similar agents in continued fevers was detrimental to the patient.

DR. E. LINTHICUM, of Evansville, had had an unfavorable experience with exalgin, believing it inferior to the other agents of its class.

DR. J. H. HOLLISTER, of Chicago, had had occasion to regret the use of antipyrin in decided pyrexia. He had used acetanilid and quinine with decided benefit.

DR. J. L. GRAY, of Chicago, had used acetanilid in epilepsy with decided benefit, and believes it superior to the bromides in the majority of cases.

DR. DUDLEY REYNOLDS, of Louisville, believed that the use of agents which merely reduce temperature was not a scientific treatment of disease,

and their influence on mortality was not marked.

On motion, the Association adjourned to 9 A.M. Wednesday.

SECOND DAY—MORNING SESSION.

The first paper was by DR. W. C. CHAPMAN, of Toledo, Ohio, on *Prognosis in Pulmonary Diseases*; DR. C. F. MCGAHAN, of Chattanooga, Tenn., followed with a paper on *Treatment of Pulmonary Phthisis*; DR. F. C. WILSON, of Louisville, read a paper on *Differential Respiration*, exhibiting a new apparatus for systematic lung exercise; DR. EDWIN RICKETTS, of Cincinnati, reported a case of *Tubercular Peritonitis with Tubercular Fallopian Tubes*; and DR. WM. PORTER, of St. Louis, read a paper on *Contagiousness of Tuberculosis*.

The first paper, that of Dr. Chapman, was a plea for more energetic treatment of the disease as a local disease, believing that thereby a more favorable prognosis was possible. Dr. McGahan believes that the climatic treatment of phthisis offers the best results, that every case of phthisis should, upon the discovery of the disease be removed from the locality in which it developed. The climate of South Carolina is best adapted to such cases. Dr. Porter believes that the latest opinions uphold the theory of the contagiousness of tuberculosis.

Dr. Ricketts cited 100 cases of tubercular peritonitis that had been treated by abdominal incision where 25 cures, from nine months to twenty-five years, had taken place, claiming that enough operative evidence has been given to positively assert that lives have been prolonged, and suffering greatly relieved, and that bolder and prompt surgical measures are justifiable. The Doctor's case presented for consideration: 1. Failure to diagnose the trouble previous to abdominal incision. 2. The lowering of pulse and temperature as a result of the operation. 3. The non-recurrence of dropsical fluid. 4. Fragile condition of tubal tissue and proneness to bleeding upon the slightest abrasion. 5. Good results obtained (hæmostatic) in the application of perchloride of iron.

Discussion was had upon all the papers bearing on the subject.

DR. THEODORE POTTER, of Indianapolis, said that the disease is not commonly hereditary; it is a local disease and only accidentally becomes a general disease. He believed that a child never emerged from its mother's womb with tuberculosis. Statistics are very unreliable as to heredity and are easily misinterpreted.

DR. WOOLEN, of Indianapolis, said that until the question of heredity was settled no conclusion could be arrived at. Can disease be hereditary? Most emphatically, no. But there is a type of constitution which may be transmitted. This

vulnerability of constitution may be hereditary, but to presuppose that a germ of disease can be transmitted through the spermatozoa or ovum through foetal life is entirely unreasonable.

DR. DUDLEY REYNOLDS, of Louisville, believes that the choicest food for the development of the bacillus is the lymph corpuscle. The inhalation of the bacillus through the imperfect air passages carries the disease to the lungs.

DR. JOSEPH EASTMAN, of Indianapolis, thinks the most important treatment is the improvement of the vital forces. Latent syphilis is the cause of many cases of tubercular peritonitis.

DR. J. A. LARRABEE, of Louisville, said that the predisposing and the exciting cause must be present in every case. As to the theory of micro-organisms, they are present everywhere. They are not essentially the disease. He does not believe it is a case of tuberculosis unless the bacilli are present. The matter of lung exercise is of the greatest importance, giving, as it does, apex expansion.

DR. CHAPMAN said that the question of heredity was not one of transmission of disease, but of constitution. This is proved by the fact that the disorder skips one generation frequently.

DR. MCGAHAN said that he did not believe in heredity in consumption.

DR. PORTER said that he did not believe that the direct inheritance of tuberculosis was proven. Chest exercise is of the greatest importance. Good tissue is the best antidote to the bacillus.

DR. L. BAUER, of St. Louis, read a paper on *Recto-Vesical Lithotomy*, after which the Association adjourned to 2 P.M.

AFTERNOON SESSION.

DR. A. B. SHAW, of St. Louis, read a paper on

SUSPENSION IN AFFECTIONS OF THE SPINAL CORD,

and exhibited a Suspension Apparatus which he has devised. The apparatus is a modification of the Sayre and Varity apparatus.

DR. LEWIS, of Kansas City, had seen many suspensions at Hot Springs, Ark., and had himself undergone the treatment with beneficial results.

DR. RYAN, of Cincinnati, did not believe that any stretching of the cord took place.

DR. VANCE, of Louisville, thought that any stretching which might occur would be ligamentous, that the cord could hardly be affected.

DR. SHAW, in closing the discussion, said that in cases of locomotor ataxia, certain cases of cerebro-spinal sclerosis, and old cases of myelitis were benefited by the treatment. Paralysis agitans was not benefited.

DR. H. C. DALTON, of St. Louis, read a paper on the subject

IS SENN'S HYDROGEN GAS TEST INFALLIBLE?

He reported several cases in which the gas test failed, and one in particular, of a Chinaman with bullet wounds of the stomach, in which the stomach was partially filled with rice and the inflation by gas simply plugged the bullet holes in the stomach and prevented the effectiveness of the test.

DR. EASTMAN said that he had used the sulphuretted hydrogen gas in preference to the ordinary hydrogen, as its odor was more persistent and seemed to better answer the demands. He had had a number of failures of the gas to ignite.

DR. H. O. PANTZER, of Indianapolis, read a paper on

RUPTURE OF OVARIAN CYST,

with report of a case in which death occurred before operative interference was had. A pedicle was found, post-mortem, which was twisted to the left. A diagnosis of twisted pedicle was made ante-mortem.

DR. A. M. CARTLEGE, of Louisville, presented a paper on *A Case of Ovarian Tumor*.

In the discussion that followed the two papers DR. EASTMAN said that he had seen the twisted pedicle case before death, in consultation, and considered the diagnosis one of extreme difficulty.

DR. RICKETTS said that the matter of twisted pedicle was to be explained by the fact that before the tumor became adherent there was pressure upon the colon, and in the passage of feces the tumor was gradually turned to the left, and thus the pedicle became adherent. This can occur only where the pedicle is long. Senn's test he found faulty frequently. Then the distension of the intestines by the gas and their replacement was a matter of great difficulty.

DR. VANCE, of Louisville, endorsed the views of Dr. Dalton as to the unreliability of the gas test.

DR. STEELE said that he had a case in which the gas test was applied. It would not ignite. The patient asked to have laparotomy performed. It was done, and eleven holes were found in the small intestines.

DR. BRANSFORD LEWIS, of St. Louis, read a paper on the *Rational Treatment of Gonorrhoea*, which was followed by a paper on *Excision of the Knee for Convenience*, by Dr. AP. MORGAN VANCE, of Louisville. DR. G. W. RYAN, of Cincinnati, presented a paper on *Orthopaedics in Infantile Paralysis*, after which the Association adjourned to 9 A.M. Thursday.

THIRD DAY.

The Committee on Nominations reported the following officers for the ensuing year: President, Dr. J. M. Mathews, Louisville, Ky.; 1st Vice-President, Dr. C. R. Early, Ridgway, Penna.; 2nd Vice-President, Dr. T. B. Harvey, Indianapolis.

Ind.; Secretary, Dr. E. S. McKee, Cincinnati, O.; Treasurer, Dr. F. McGahan, Chattanooga, Tenn.

The next meeting will be held in Louisville, Ky., the second Tuesday in September, 1890.

Papers were read by DR. A. J. THOMAS, of Indianapolis, on *The Insane of Indiana—their Care and Treatment*; by DR. D. A. THOMPSON, of Indianapolis, Ind., on *Some Forms of Eye Trouble*; by DR. S. S. BISHOP, of Chicago, on *The Abortive Treatment of Acute Naso-Pharyngeal Catarrh*; by DR. O. EVERTS, of Cincinnati, on *The Treatment of the Insane as Related to Other Conditions of Society*; by DR. G. F. LYDSTON, of Chicago, on *Apparent Concretions, Transformations of Syphiloma of the Tongue*.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

Professor Peter on the Necessity of Antiphlogistic Treatment at the Onset of Acute Pneumonia and Acute Pleurisy—Professor Lépine reports a Curious Case of Cerebral Accidents determined by a Hæmatoma and Cured by Trephining—Dr. Constantin Paul's Researches on the Action of Saccharin—Dr. Maurice Perrin.

Professor Peter lately delivered a very interesting clinical lecture at the Necker Hospital, on the necessity of the antiphlogistic treatment at the onset of acute pneumonia and acute pleurisy. The lecturer said that he was induced to take up this subject owing to the neglect, now-a-days, of this precious measure in properly selected cases. If, he said, our predecessors bled too much, we have gone to the opposite extreme, much to the prejudice of the patients. He based his present lecture on a case in his ward in which the patient was affected with pleurisy accompanied with effusion, for which he was, for the fourth time, being tapped. This might have been obviated if the antiphlogistic treatment had been adopted at the commencement. Professor Peter is one of the few physicians of the Paris Faculty who employ the antiphlogistic treatment in these and other cases in which it was formerly adopted, but it is owing to the divers theories where bacteriology plays a preponderating rôle, it has been wrongfully abandoned. By antiphlogistic medication the lecturer not only referred to drugs, but included bleeding, cupping after scarifications, leeches and blisters, the latter being applied in a later stage of the acute inflammatory affections. He cited the teachings and practice of such men as Andral, Bouillaud and Grisolle in support of his own practice, although he must admit that Bouillaud, by his exaggeration of this treatment, did much harm both to the cause that he advocated and to the patients, a reaction in the pro-

fession was produced, and the antiphlogistic method fell into disuse. The introduction of bacteriology has struck the last blow to this mode of treatment. At the present moment, pneumonia is considered a microbial malady. The consequence is, one sees only this microbe, which it is necessary to kill, whence the idea of practicing injections into the lungs; but it was scarcely possible, in all the cases, to reach in this way the microbes. It is sufficient, in leaving only a few, for a rapid multiplying of the microbes to take place. This system was soon abandoned; but the misfortune is that these theories do not lead to any useful medication. Professor Peter concluded his lecture by repeating his injunction of slight depletion in all cases of acute pleurisy. If phlebotomy is objected to, scarifications followed by cupping glasses may be employed, or a few leeches to the number of from six to ten may be applied, and thus prevent effusions, or the malady becoming chronic. In the same way, he finds that when pneumonia is treated in a proper manner, cures rapidly. He believes that cases of chronic pneumonia have become more frequent since the abandonment of the antiphlogistic method.

Professor Lépine, of Lyons, lately reported to the Academy of Medicine a curious case of cerebral accidents determined by a hæmatoma and cured by trephining. The patient was a man of 29 years of age, alcoholic, and for five years he was subject to epileptiform fits which were attributed to a fall. He soon got into a comatose state which was followed by complete aphasia and slight hemiplegia of the right side. Trephining was decided upon, as the state of the patient was not improving. The operation was performed ten days after the accident, about the level of the ridge of Rolando. At the moment when the dura mater was incised, about 25 grams of liquid of a chocolate color spouted out with some force. On the next day, the patient was able to write his name, and in a few days later the aphasia and the hemiplegia disappeared. But notwithstanding the success of the operation in this case, Dr. Lépine is of opinion that it should be practiced with great prudence and reserve.

Dr. Constantin Paul has lately made some new researches on the action of saccharin. It results from his new experiments that the antiseptic power of saccharin diminishes by the addition of alkalis. The maximum antiseptic effects are obtained when the saccharin is directly incorporated in a state of powder in the nutritive medium, the latter being in general sufficiently alkaline to dissolve the saccharin. The therapeutic consequences of these facts are as follows: When it is wished to employ saccharin as a sweetening substance, an equal proportion of the bicarbonate of soda should be added to it, and then there would be no fear of the gastric troubles sometimes com-

plained of by certain diabetic subjects. The saccharinate of soda may be administered to the extent of 5 grams. Should, on the contrary, a strong antiseptic action be required, pure saccharin in powder should be employed. If, however, it is intended for the microbe of putrefaction or of suppuration, the proportion of 2 parts of the bicarbonate of soda with 3 of saccharin, renders the saccharin very soluble and permits it to arrest the development not only of these two microbes, but of all the numerous microbes which live in the mouth and possess the property of fluidifying gelatin. Saccharin rendered soluble in these proportions constitutes a valuable mouth-wash.

Military Surgery has just sustained a great loss in the person of one of its most illustrious representatives, Dr. Maurice Perrin, who died at Vezelise, his native town, on the 31st of August, last, after a very short illness. He was Inspector-General of Military Hospitals, President of the Academy of Medicine, and Commander of the Legion of Honor. Born on the 13th of April, 1826, after having prosecuted his studies at Nancy, he came to Paris in 1851, and took his degree of Doctor of Medicine. In 1858 he was appointed, after competition, Agrégé of Val-de-Grâce; and ten years after he was elected Professor of Operative Surgery. His most remarkable works consist in his studies of the psycho-chemical action of anæsthetic substances, on the rôle of alcohol and of anæsthetics in the organism, *Treatise of Surgical Anæsthesia*, *Treatise of Ophthalmoscopy and Optometry*. He was elected Member of the Academy of Medicine in 1875, and raised to the Presidency in 1889.

A. B.

DOMESTIC CORRESPONDENCE.

A Tribute to Dr. Samuel Jackson.

To the Editor:—The writer, who in the winter of 1862-3 attended the last course of lectures that Dr. Samuel Jackson delivered at the medical department of the University of Pennsylvania, remembers that distinguished lecturer well, and recalls with what feeling he delivered his farewell address to the medical students of the class in the spring of 1863, when he forever bade farewell as a lecturer and retired from the chair of physiology. The tears ran down over his cheeks while he was speaking, and there were few dry eyes in the building. The decrepitude of age had crept upon him in the many years he had lectured in the university. He had lost the use of his lower extremities, so that he had to be carried to and from the chair from which he lectured. His hair was gray and his face wrinkled, but he was still lucid and fluent in his delivery. He had been Henry Clay's physician, and in his

discourse upon death, in the the lecture-room, told the story of how timid that great man expressed himself as being as to the pains of physical death. Dr. Jackson endeavored to soothe the mind of the great orator by saying that death takes place by such easy and gradual processes that it was entirely void of pain. He compared death with the going out of the flame of a candle that was burning in the room at the time, and which was flickering out for want of combustible material. He said: "Mr. Clay, you see how easily and slowly that flame is being extinguished; so it will be with you when dying—easy, gradual, painless."

In a visit I made to Dr. Jackson in the summer of 1865 he said to me: "I have always, during life, been a hard student, and one of the problems I have been unable to solve yet is how much inflammable matter in a given time the sun used in warming that space included in the solar system." But he stated further that, if unable to solve the problem in this life, in the next life, to which he was fast hastening, he hoped to be enabled to solve the problem, then and there.

At a speech that Dr. Samuel Jackson delivered at a reception given to Edwin Forrest at Philadelphia, Pa., in 1838, one who was present and heard the great speeches of the evening said: "The speech of Dr. Samuel Jackson was by all odds the gem of the evening. His diction was of the best, and a constant stream of eloquence bubbled from his lips. He appeared to be of imagination all compact, and his fancy seemed to be as free and boundless as the chainless wind. Striking figures and beautiful metaphors came at his call as readily as though he wielded the wand of the magician. His words, expressing the most beautiful thoughts, fell from his lips with the grace and readiness of water sparkling from a fountain. He spoke with great ease and rapidity, and to the then immature and inexperienced mind of the writer it was the most brilliant and eloquent speech. He has since heard the deathless three of America, Clay, Calhoun and Webster. He has listened with delight to George McDuffee, William C. Preston, John J. Crittendon, George Poindexter, Jefferson Davis and Edward Everett. He has hung enraptured many times over his utterances while that marvelous child of genius, Sergeant S. Prentiss, poured forth a stream of impassioned eloquence as resistless as the rush of the mighty river he loved so well, and on the margin of which he had his home. That imperial river, not inaptly termed "a great inland sea" by Mr. Calhoun, now flows by his grave; and its turbid billows, as they roll in solemn grandeur to the ocean, murmur an eternal requiem to the memory of the most eloquent orator of modern times, or, in my judgment, of any known period of the world's history. And yet,

having often listened to the great masters of eloquence whom I have named, the speech of Dr. Samuel Jackson, heard more than half a century since, still lingers in my memory, not only as a "thing of beauty," but "a joy forever."

JOHN M. BATTEN.

309 Fifth ave., Pittsburgh, Pa., August 9, 1889.

Audi Alteram Partem.

To the Editor:—The making of punctures, exploratory and otherwise, through terebrated, instead of trephine openings, as described by Dr. Edmond Souchon, and referred to in your editorial of September 7th, is not new in any sense. It was carried out by me and its results described several years ago.¹ I have never claimed originality for it, as Gibier, if I remember rightly, employed terebration ten years ago, in the course of some inoculation experiments involving the brain. The apparatus used by me was an ordinary watchmaker's drill.

Respectfully yours,

E. C. SPITZKA, M.D.

712 Lexington Ave., New York, Sept. 7, 1889.

BOOK REVIEWS.

TRANSACTIONS OF THE NEW YORK STATE MEDICAL ASSOCIATION FOR 1888. Vol. v. Edited for the Association by ALFRED LUDLOW CARROLL, M.D., of Richmond County. New York: J. H. Vail & Co., 1889. Pp. viii-610.

This is a volume of far more than ordinary interest, and we feel like congratulating the Association on the superior character of the work done and on the excellence with which the editor has performed his part. More than forty papers were presented at the meeting in question, and it is not too much to say that all are of a highly meritorious character. Of especial interest are the discussions of various important subjects in which the leading topics are considered *seriatim*, as for example the "Discussion on Puerperal Septicæmia." In this the "Introductory Remarks" were made by Dr. C. C. Frederick; then followed a series of six leading questions, some of them particularly comprehensive in character. Each of these questions formed the text of one or more short papers, in which the writers confined themselves closely to the immediate question under consideration; in this discussion the papers were read by Drs. H. M. Biggs, E. D. Ferguson, S. B. W. McLeod, A. L. Carroll, F. W. Ross, John Shrady, W. H. Robb, Frank Grauer, William T. Lusk and R. L. Banta.

The New York State Medical Association was founded in 1884, and has thus far been presided over by such distinguished men as Henry D. Dildama, John P. Gray, E. M. Moore, Isaac E. Taylor, John Cronyn and William T. Lusk. The membership has already reached the large figure of 681. It comprises five branch associations in the various sections of the State, between which the membership is pretty evenly divided.

NECROLOGY.

Alexander T. Darrah, M.D.

DR. ALEXANDER T. DARRAH, of Bloomington, Ill., died at his home on September 4, 1889, after a short illness caused by congestion of the bowels. Dr. Darrah was born in Delaware, Ohio, in 1837, was graduated from Rush Medical College, Chicago and practiced medicine in Tolono, Ill., until 1883, when he removed to Bloomington. He enjoyed a deservedly high reputation as a physician and public spirited citizen. He was also very prominent in the Masonic fraternity, having been elected Grand Master of Illinois in 1886 and 1887. A wife and three children survive him.

MISCELLANY.

EDISON'S IMPRESSIONS OF PARIS.—A correspondent of the *Scientific American* asked Edison: "How are you impressed with Paris?" "Oh, I am dazed. My head's all in a muddle, and I reckon it will take me at least a year to recover my senses. I wish now that I had come over in my laboratory blouse, and could have gone about unknown and have seen something. The exhibition is immense, larger than our Philadelphia exhibition. So far, however, I have seen but very little of it. This morning, however, I saw a tool which will save me \$6,000, clear, a year. It is a chisel worked by hydraulic pressure. I just saw it, passing by—just a glance. I shall order some, and send them out. They will enable us to reduce our labor by eighteen hands. What has struck me so far chiefly is the absolute laziness of everybody over here. When do these people work? What do they work at? I have not seen a cartload of goods since I came to Paris. People here seem to have established an elaborate system of loafing. Some of these engineers who come to see me, fashionably dressed, walking-stick in hand—when do they work? I don't understand it at all."

THE McLEAN COUNTY (ILL.) MEDICAL SOCIETY met at the office of Drs. Darrah & Corley on the 2d inst. There were present Drs. H. Parkhurst, F. J. Parkhurst, J. B. Taylor, F. W. Keyes, C. C. Sater, L. E. Spear, John Little, J. I. White, C. J. Corley, Rhoda Galloway, E. Mammen, S. T. Anderson, D. A. White, W. R. Shinn, N. F. Jordan, F. C. Vandervort. Drs. H. F. Ballard and W. L. Hallam were elected to membership. The application of Dr. C. E. Ballard, of Saybrook, for membership, was received and referred to the Board of Censors. Dr. E. Mammen exhibited with the microscope a piece of epithelioma; Dr. J. B. Taylor read a very able and interest-

¹ "On Some Points Regarding Therapeutical and Other Injuries of the Brain," Proceedings American Neurological Association, 1887. *Journal of Nervous and Mental Diseases*; also, *Journal of Comparative Medicine*, July, 1886.

ing essay on "The Faults of the Medical Profession." Dr. C. J. Corley's essay on "Urinalysis" was attentively listened to by all present. A vote of thanks was tendered by the Society to Drs. Taylor and Corley for the excellence of their papers. The President appointed Drs. D. A. White and F. J. Parkhurst as essayists for the October meeting, and Drs. W. R. Shinn and E. Mammen for the November meeting. The Society adjourned to meet on the first Monday in October.

THE PROFESSIONAL CANVASSER No. 3 is a thirty-two pages pamphlet combining a price list of the scientific medical periodicals of the United States and a concise consideration of the subject, "What can be done with old books?" Applicants for copies are solicited to remit six cents to cover costs of postage, etc. Address all communications to Fred. D. Van Horen, 23 Clinton Place, New York.

SENILE MICROBIO-MANIA.—The *Revue de Thérapeutique* says: A savant of Naples, Dr. Malinconico, has made a greater discovery than the famous elixir of youth of Brown-Séquard. The journals announce very seriously that Dr. Malinconico is about to discover the *microbe of old age*.

This microbe is transmitted, according to the Italian savant, by inheritance, invades with age the entire human organism, ravages and destroys it, producing old age, and finally death.

Dr. Malinconico hopes that he will be able to discover the means to combat, and finally to destroy, this terrible microbe, which will prevent men growing old. The savants are invaluable!—*Times and Register*.

PROGRESS OF SANITATION.—There are now thirty-nine crematories in various parts of the world. Italy leads easily with twenty-three, then comes America with ten, while England, Germany, France, Switzerland, Denmark and Sweden are satisfied so far with one apiece. In Italy there were two cremations in 1877; the number rose to fifteen in 1877, and in 1878 the number was 226. Since 1876, 1,177 cremations have taken place in Italy, whilst the combined numbers from other countries bring the total only to 1,269.

QUERIES WANTED.—At the San Francisco meeting of the American Pharmaceutical Association a resolution was passed requesting the members to propose such queries as they would like to see answered next year. Such queries should be forwarded at once to the chairman of the Section on scientific papers, H. M. Whelpley, St. Louis, Mo. Members who have decided to write papers should send the titles to the same address.

NEW YORK STATE MEDICAL ASSOCIATION.—The sixth annual meeting of this Association will be held at the Hotel Brunswick, New York, commencing next Wednesday and continuing three days. The programme contains a list of sixty-six papers, the writers of which are eminent and well-known members of the profession. The membership now numbers over 680 physicians and we have no doubt there will be a full attendance and a large accession of new members. Dr. J. G. Truax, 17 East 127th St., New York City, is the Secretary.

HEALTH IN MICHIGAN.—For the month of August, 1889, compared with the preceding month, the reports indicate that cholera morbus, dysentery, cholera infantum, diarrhoea, and typho-malarial fever increased, and that rheumatism, neuralgia and inflammation of kidney decreased in prevalence.

Compared with the preceding month, the temperature in the month of August, 1889, was higher, the absolute and relative humidity were less, and the day and night ozone were more.

Compared with the average for the month of August in

the three years, 1886–88, bronchitis, cholera morbus and tonsillitis increased, and neuralgia and rheumatism were less prevalent in August, 1889.

For the month of August, 1889, compared with the average of corresponding months in the three years 1886–88, the temperature was slightly higher, the absolute and relative humidity were less, and the day and night ozone were more.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of August, 1889, at 21 places, scarlet fever at 18 places, typhoid fever at 40 places, and measles at 7 places.

Reports from all sources show diphtheria to have been reported in 5 places less, scarlet fever at 12 places less, typhoid fever at 22 places more, and measles at 6 places less than in the preceding month.

LETTERS RECEIVED.

Dr. W. H. Atkinson, New York; Dr. W. K. Sutherland, Mansfield, Ia.; Prof. Schnitzler, Iosefstadt, Vienna, Austria; Dr. Thos. Eliot, Worth, Tex.; Dr. E. E. Montgomery, Philadelphia; Dr. C. H. Cook, Natick, Mass.; Dr. Frank H. Ingram, Chicago; Dr. Henry O. Marcy, Boston; Dr. John B. Hamilton, Washington; Dr. W. A. Scott, Swanton, O.; Dr. William H. Morrison, Philadelphia; Dr. H. Judd, Galesburg, Ill.; Dr. J. G. Truax, New York; Merchants' Exchange National Bank, New York; Dr. Henry H. Smith, Philadelphia; Dr. James Grundy, Macleod, Pa.; Dr. R. J. Dunglison, Philadelphia; Dr. G. Eiskamp, Richmond, Ia.; Dr. C. W. Richardson, Washington; Dr. B. Chapman, Copley, O.; Dr. D. D. Bramble, Cincinnati, O.; E. Steiger & Co., New York; Dr. J. M. Dunham, Columbus, O.; Dr. Walter Channing, Brookline, Mass.; Dr. Richard J. Forster, Charlestown, Mass.; E. Merck, New York; Dr. Wm. L. Worcester, Little Rock, Ark.; Dr. E. S. Everett, Wichita, Kan.; Dr. Bransford Lewis, St. Louis, Mo.; Dr. Landon B. Edwards, Richmond, Va.; Dr. M. E. Connell, Wauwatosa, Wis.; Dr. A. B. Judson, New York, Ia.; Dr. Geo. Mackie, Dryden, Texas; Dr. O. M. Bourland, Van Buren, Ark.; Dr. C. Armstrong, Carrollton, Ill.; Dr. W. E. H. Morse, Dallas Centre, Ia.; Dr. Frank D. Green, Louisville, Ky.; E. White, Chester, Ind.; Oneida Springs Co., Utica, N. Y.; Dr. Jonathan Wright, Brooklyn, N. Y.; Dr. C. Kennedy, Macleod, Northwest Territory, Canada; Dr. C. O. Cooley, Madelia, Minn.; Dr. E. P. Brewer, Norwich, Conn.; Dr. Wm. B. Atkinson, Philadelphia; Plympton Mfg. Co., Hartford, Conn.; Dr. J. Solis-Cohen, Philadelphia; Dr. J. D. S. Davis, Birmingham, Ala.; J. Walter Thompson, New York; Dr. Allison Maxwell, Indianapolis, Ind.; Henry Bernd & Co., St. Louis, Mo.; Dr. J. M. Bessey, Manitou Springs, Col.; Dr. Alex. Boggs, Paris, France; Lloyd Bros., Cincinnati, O.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from September 7, 1889, to September 13, 1889.

With the approval of the Secretary of War, the leave of absence granted Major John H. Janeway, Surgeon, in S. O. 52, Div. of the Pacific, July 29, 1889, is extended two months. Par. 1, S. O. 206, A. G. O., September 5, 1889.

First Lieut. Freeman V. Walker, Asst. Surgeon, leave of absence on surgeon's certificate of disability granted in S. O. 92, April 20, 1889, is extended one month on surgeon's certificate of disability, by direction of the acting Secretary of War. S. O. 211, A. G. O., September 11, 1889.

CORRIGENDUM.

In THE JOURNAL of September 7, 1889, page 348, eighth line from top of second column, for "Dr. E. P. Hurd" read Dr. Henry M. Hurd.

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ORIGINAL ARTICLES.

SOME OF THE GRAVER AND RARER FORMS OF CINCHONISM.

*Read in the Section of Medicine at the Fortieth Annual Meeting of
the American Medical Association, June 25, 1889.*

BY I. E. ATKINSON, M.D.,

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS, AND OF
CLINICAL MEDICINE IN THE UNIVERSITY OF MARYLAND.

Although everyone knows that the preparations and alkaloids of cinchona bark occasionally produce very undesirable effects upon the human organism, there seems to be a widespread impression that results of a more serious character are not to be apprehended, and one is accustomed to see these preparations administered with utter recklessness. It is true, the unpleasant results observed are usually the outcome of idiosyncrasy, and are not part of the regular physiological action of cinchona. As ordinarily observed this action cannot be said to be toxic in the sense in which we speak of the toxic action of strychnine, of opium, of arsenic, and the other well-recognized poisons. We regard as exceptional the various cutaneous disorders, the disturbances of the digestive, the respiratory, the circulatory and nervous systems not infrequently observed, and usually hold them to be accidental expressions of the resentment of the economy at the presence of the drug, expressions of idiosyncrasy. Although graver forms of quinine intoxication may very often be considered as due to the peculiar susceptibility of the individual, it is certain that in excessively large doses definite, dangerous, and even fatal poisoning may follow. Beyond the limits of physiological action there is an indefinite area in which idiosyncrasy appears to determine the toxicity, in which there can be no *a priori* determination of the danger line. While there is but slight danger to life from any but inordinate doses, quantities but little beyond the limits of everyday administration are capable of entailing grave consequences. These graver effects of cinchonism present but few terrors to the general medical mind, and when considered in relation to the universal employment of cinchona preparations in medicine are indeed numerically insignificant, yet research shows that our literature

abounds in indubitable evidence that their absolute frequency is by no means small. That the general medical public has failed to properly appreciate these dangers is largely attributable to the fact that many of the most important and intelligently reported observations have appeared in special journals.

Recent observation of disastrous results of cinchonism has prompted the writer to attempt to lay before this Association a brief *résumé* of a portion of the subject; and in bringing it before a body of general practitioners, he hopes to be pardoned for having presented in abstract and quite inadequately, a number of reports prepared with distinguished ability and with such minuteness of detail, that their exhaustive consideration can only be appropriately attempted by the specialist.

QUININE BLINDNESS.

Case 1.—On August 31, 1888, I was called to the country to see, in consultation, a young lady, 13 years of age, who had spent two weeks during the early part of the month at Atlantic City. She returned home on August 13th, not feeling well. She continued ill and on the 19th had a slight chill and took to her bed. She was visited by her physician who, finding her temperature to be 104° F., gave her sulphate of quinine in large doses, but without controlling the fever. The dose was gradually increased until she was taking 45 grains daily. She did not appear to be profoundly cinchonized; tinnitus was not very marked and deafness was slight. Her sight, however, began to fail and by the 27th she had become totally blind. The administration of quinine was not abandoned, and on the 30th she took three 10-grain doses. During this period the temperature ranged from 102° to 105° F., and the symptoms of typhoid fever became established. At the date of my visit she complained of slight pain in the occipital region. Her eyes were staring and her pupils widely dilated and quite irresponsive to light. There was a constant snapping of the lids, which the patient declared she could not control. There was complete blindness. She was not sensitive to the strongest light. No more quinine was given and the typhoid fever pursued a favorable course. On September 24th the blind-

ness was still complete, but by October 9th she was able to distinguish objects about the room, but with a field of vision still extremely limited. Dr. Russell Murdoch saw her on September 14th, and has kindly informed me, from his note book, that he found that "the arteries and veins were extremely reduced. There was entire loss of sight, both eyes being equally affected." On October 30th, after general tonic treatment and the use of strychnine, Dr. Murdoch found that the vessels had been restored to their usual size and the vision to $\frac{xx}{20}$, the field of vision alone remaining very slightly contracted.

Although the power of quinine to produce blindness in certain susceptible individuals, when given in excessive doses, has long been known, the fact has attracted surprisingly little attention until quite recently. As early as 1841 Giacomini¹ had observed quinine amaurosis. His case was as follows:

Case 2.—A man took from 12 to 15 grams (180 to 225 grains) of sulphate of quinine at a single dose. Within an hour he was seized with cardialgia, nausea, vertigo, incapacity of movement, and unconsciousness. Eight hours afterward there was subnormal temperature, cold extremities, livid lips and fingers, fetid breath, slow respiration, regular but very feeble pulse, inaudible voice, very dilated pupils, with sight and hearing almost gone. Recovery from this condition took place very slowly.

Case 3.—(Lewis, 1845.)² This was a case of total blindness occurring during the administration of large doses of sulphate of quinine.

Cases 4, 5 and 6.—(McLean, 1846.)³ In one case about 16 grains of sulphate of quinine were given hourly until nearly an ounce had been taken. Another patient took 3 grains hourly for three days, and the third had 3 drachms in 6-grain doses within thirty-six hours. In all perfect blindness was the result. Amendment was slow, and recovery was perfect in none. One patient for nearly a year could look steadily toward the sun without seeing it. When he began to see sufficiently to read he would perceive a small luminous spot upon the paper about one inch in diameter, outside of which all was cloudiness and confusion.

Case 7.—(Baldwin.)⁴ A negro girl, 6 years old, was given 28 grains of sulphate of quinine in forty-eight hours, for a tertian remittent fever. Shortly after the last dose the skin became dry and restlessness became very pronounced. Convulsions followed. The pupils became dilated and total blindness ensued. She was able to answer questions. Two hours later, with blind-

ness and dilated pupils, and restlessness, she died.

Case 8.—(Baldwin, *ibid.*) An adult male, with pneumonia, took 68 grains of sulphate of quinine in twenty and a half hours. One and a half hours after the last dose had been taken Baldwin saw him. A little while previously he had been seized with a jerking motion of the whole body. This lasted several minutes, and immediately afterward his vision was so imperfect that he could scarcely distinguish anything. There was great restlessness, anxiety and alarm. The pupils were dilated. Convulsive movements of the body came on every ten or twelve minutes, sometimes apparently of the whole body, sometime confined to the arms. During these convulsions he was not insensible—occasionally the eyes presented a vacant, staring look, with upward rolling. Three hours after the ingestion of the last dose of quinine he was completely blind. Vision began to improve in twenty-four hours afterward, but was never perfectly recovered.

Case 9.—(Trousseau.)⁵ A patient in whom a dose of 48 grains of sulphate of quinine had caused temporary blindness and deafness.

Cases 10 and 11.—(Guersant.)⁶ Mme. Bazire, being seized with malarial fever, was given by her husband, a physician, in a very short space of time 240 grains of sulphate of quinine. Soon afterward, her symptoms becoming more grave, she was given, at one dose, 375 grains. Dr. B. now fell sick himself, and no more of the drug was administered to her, but within a short space of time he administered to himself, by mouth and rectum, 900 grains, and took in eight or nine days 5 ounces. Reveillon found him covered with cold-sweat, completely deaf and blind, with slow and difficult respiration, and in a profound stupor, with the physiognomy of a drunken man. In this condition he died. Mme. B. recovered imperfectly, having been for a long time blind and deaf. The senses of sight and hearing always remained feeble.

Cases 12, 13, 14 and 15.—(Briquet.)⁷ These were four patients who had taken from 45 to 75 grains of sulphate of quinine daily for several days. Twice the blindness was transitory, lasting only a day, and then completely disappeared. In the third case the blindness lasted longer, and in the fourth case it only disappeared after a month. (Briquet also quotes Monneret as having seen four cases of temporary weakening of the sight, in two lasting only a few hours, in one a day, and in one four days. He also quotes Hatin as having seen a case of quinine amaurosis which lasted several months).

Case 16.—(von Graefe.)⁸ A patient took 6

¹ Dictionnaire de Médecine, 2m. Edition, Art. Quinine, p. 567.

² Western Jour. Med. and Surg., Louisville, 1845. 3d series, Vol. iv, p. 396.

³ Ranking's Abstract, Illinois and Indiana Med. and Surg. Journal, December, 1846.

⁴ American Journal of the Medical Sciences, April, 1847, p. 292.

⁵ Dictionnaire de Méd. Loc. cit.

⁶ Dictionnaire de Méd., 2me Edition, Art. Quinine, p. 567.

⁷ Traité Thérapeutique du Quinquina, Paris, 1853.

⁸ Arch. für Ophthalmologie, Berlin, 1857, Vol. iii, pp. 683-685. Archives of Ophthalmology, Vol. x, p. 220. Knapp.

drachms of quinine within two weeks. There resulted, violent tinnitus, deafness, moderate amblyopia in the left eye, and almost total blindness in the right eye. Four months later amblyopia of the right eye still existed. The visual fields and ophthalmoscopic condition in both eyes was normal.

Case 17.—(von Graefe.) A man took 15 grains of sulphate of quinine daily until almost one ounce was taken. When he increased the dose to 22 grains he had tinnitus aurium, hardness of hearing and weakness of sight, which increased in a few days to total blindness. Three months later blindness of the right eye was still complete. The sight of left eye was restored. Ophthalmoscopic condition and visual fields in both of these cases was normal.

Case 18.—(Voorhies.)⁹ A young lady had taken within a few hours one ounce of sulphate of quinine, and one ounce additionally each day for the two succeeding days. On the morning of the second day she was extremely prostrate, hardly able to move her fingers. She had feeble pulse and hardly comprehended the simplest question. Audition was but slightly impaired, but she was perfectly blind. There was marked pallor of her face and of the palpebral conjunctivæ. The pupils were normal, responding promptly to light. There was anæsthesia of the cornea. The ophthalmoscopic examination revealed perfectly white discs. There was not a trace of the optic nerve vessels, veins or arteries. The choroidal vessels were empty. There was a pale, yellowish tinge of the retina. The treatment with amyl nitrite and quinine was not followed by improvement until the middle of the tenth week. The return of sight proceeded slowly until she was able to read Jaeger No. 1. More than a year afterward the optic discs remained perfectly white, with no trace of the central artery, except a small twig of that of the left eye, which was barely perceptible. The field of vision was greatly contracted, the greatest diameter (vertical) being less than 4" when taken at a distance of 2 feet.

Case 19.—(De Wecker.)¹⁰ A man took a large but indeterminate dose of quinine. He awoke perfectly deaf and blind. Eventually he recovered his sight and hearing, the former imperfectly. The accident occurred in the tropics and some time must have elapsed before De Wecker saw him.

Case 20.—(Solomon.)¹¹ A seafaring man, 30 years old, took a teaspoonful of quinine at one dose. There soon followed vertigo, chilliness, a sense of sickness and failure of sight. After some interval Solomon found that he could read brilliant type (Jaeger's No. 1), a single letter

only at a time, so contracted was his field of vision, so complete was the anæsthesia of the retina, except at the point occupied by the yellow spot. The pupils were of normal diameter but moved sluggishly. The symptoms gradually subsided, and nine months afterwards the patient declared himself to be in perfect health.

Case 21.—(Roosa.)¹² The patient was a man who began to take compound tincture of cinchona to remove the cravings of the alcohol habit. He was 50 years old. On June 24th, 25th, 26th, 27th and 28th he continued to take this preparation in doses of from one to two ounces at short intervals. During these days he drank a quantity representing 125 grains of an alkaloid of cinchona. Two days later (July 1) he was stupid, with flushed face and conjunctivæ, and was apparently unable to see or hear. On July 3d hearing had become almost normal, but his sight remained much impaired. Vision: R. E. = quantitative perception of light. L. E. Could count fingers at a distance of one foot. The ophthalmoscope revealed lessened size of the arterial vessels, there was no abnormality in the veins, there was a lessened number of vessels on the papillæ, but no marked paleness. There were no changes in the membrana tympani. Strychnine was ordered. On July 6th he was able to walk about. Vision: = $\frac{2}{3}$ in each eye, but the visual field was very much contracted. July 16th. Both visual fields were concentrically limited. Measurements drawn on a blackboard 14" distant were: Rt. field, vertical 9", horizontal 7½"; limitation most marked on the temporal side. Left field, vertical 7", horizontal 8", limitation more regular. Optic papulæ very pale and arteries narrow. July 20th. Vision: = $\frac{2}{3}$ in each eye. Can see perfectly well in a straight line, but when walking about a room has some difficulty in seeing small articles of furniture. On April 23, 1879, his condition was substantially the same. The visual field was increased somewhat in the left eye, = 9" vertically and 16" horizontally. The optic discs remained pale and the arteries small. There were no other ophthalmoscopic changes.

Case 22.—(Roosa and Ely.)¹³ Mrs. B., 34 years old, was seen Nov. 7, 1879. She had pernicious malarial fever in Cuba in Nov., 1877. During one day she took 50 grs. of sulphate of quinine, during the next day 90 grs., and during the three or four succeeding days 30 or 40 grs. At 11 P.M. of the day upon which she took 90 grs. she became blind and remained so for three or four days. After that a gradual restoration of sight occurred. There were no aural symptoms. Her intellect remained clear most of the time. The blindness was so complete that she had no perception of light.

⁹ Transact. Amer. Med. Assn., 1879, p. 411.

¹⁰ Ocular Therapeutics, Translation, London, 1879.

¹¹ Ranking's Abstract, Vol. IV, 1872.

¹² Archives of Ophthalmology and Otology, 1879, Vol. viii, p. 392.

¹³ Archives of Ophthal., Vol. ix, 1880, p. 41.

Vision was perfect before her illness, but had never been so good since. She felt as if there were a veil over her eyes and was unable to tell whether her linen was clean when it came from the wash. She could not see certain shades of dark blue well, but distinguished all other colors imperfectly; she had most difficulty with red. When her vision first began to return she had no color perception whatever. R. E. Vision = $\frac{2}{3}$; reads 1 Jaeger fluently. L. E. Vision = $\frac{2}{3}$; reads 1 Jaeger fluently. V. = $\frac{2}{3}$ with both eyes open. The fundus of each eye was somewhat indistinct; the discs were too white; the capillaries seemed deficient. The visual fields as tested at 12" by Carmalt's perimeter were concentrically limited.

Case 23.—(Gruening.)¹⁴ A woman, 35 years old, had a miscarriage at the sixth week. Septic symptoms succeeded. She was given 80 grs. of sulphate of quinine in thirty hours. Shortly after the last dose she had convulsions characterized by twitchings of the facial muscles and jerking of the upper and lower extremities. She did not lose consciousness during this attack. When this had passed she was totally deaf and blind. Her hearing returned in twenty-four hours. Gruening found the pupils dilated *ad maximum*, without either direct or consensual contraction. Accommodative contraction was clearly demonstrable when the patient made a strong convergent effort. Both refractive media were clear. The optic discs were pale and transparent, with well defined outlines. The retinal arteries and veins were so attenuated that in the inverted image they could hardly be perceived. In the upright image the vessels appeared as continuous, exceedingly narrow bands tapering to fine points somewhat abruptly. The slightest pressure upon the eyeballs made all the vessels bloodless. At the macula of each eye there was a cherry-colored spot surrounded by a zone of bluish-gray opacity. Blindness was absolute—the light of an Argand lamp concentrated upon the eye by means of a convex lens was not perceived. There was no phosphene by pressure. The galvanic current elicited no reaction of the optic nerve. There was no pain. Hearing was blunted. The tympanic membrane was not injected; there was no albuminuria. Eight days after the occurrence of blindness Knapp saw the case and agreed in the diagnosis of quinine amaurosis. At that time the circumvascular retinal opacity and the cherry-colored spot at the macula had disappeared; the optic discs and the retinal vessels remained unchanged. The pupils were moderately dilated and fixed except with efforts of convergence, when slight contraction was noticeable. July 19 (twenty-second day) she could discern the position of the window. She had quantitative perception of light in both eyes. After losing and regaining perception of light more than once she was finally (August 16, about seven

weeks after the attack), able to count fingers with either eye at a distance of 4 feet. August 30 she read ordinary type with + 3 D., her hypermetropia being 3 D. The letters, however, appeared white upon a black ground. She was totally color blind. On September 23 the pupils were moderately dilated without any direct or consensual action, but contracted with accommodating efforts. Refractive media clear. The optic discs were still very pale but transparent. The retinal veins and arteries were filiform, with + 3 D.; her sight was $\frac{2}{3}$ and she read Snellen 1½ with either eye. Field of vision concentrically limited; that of the right eye measured 30° on the temporal side but did not extend to 20° in any other direction; the left eye vision was still more contracted, extending to about 18° on the temporal side, less than that in all other directions. On Snellen's color chart she recognized no color. All the letters appeared gray to her, but the yellow ones were much lighter than the others. In the spectroscope she saw only a number of gray stripes of different shades. November 8. The field of vision slightly enlarged and color sense improved. December 28, 1880, she was able to distinguish the four fundamental colors, yellow, blue, red and green; the two latter, however, only when presented in large surfaces. The fields of vision were increased.

Case 24.—(Buller.)¹⁵ A woman, 34 years old, had recently been confined. Septicæmic symptoms appearing, she was given two doses of sulphate of quinine, of 20 grs. each, during the first twenty-four hours, the same doses on the second, and on the third day she took three doses of 20 grs. each. On the following day fever and delirium were gone, but she was absolutely blind. Buller saw her during this day (August 27, 1879). Externally, the eyes appeared normal. The tension and movements were natural, the pupils were widely dilated and not responsive to the strongest illumination, nor to the effort of accommodation. The refractive media were normal. Left eye. There was a diffuse, bluish-gray haziness or turbidity of the retina for a considerable distance in every direction, most markedly in the region of the macula, the centre of which, by the direct method, had the appearance of a cherry red patch about 1 line in diameter. There were no retinal hæmorrhages and no choroidal changes. The retinal veins as compared with the retinal arteries were unusually large, but decidedly paler than in healthy eyes. The arteries were normal except actually or relatively diminished in size. Arterial pulsation was readily evoked by pressure upon the sclerotics. The opacity of the retina nowhere obscured the vessels, and the small branches converging toward the macula were unduly conspicuous. The retinal cloudiness gradually faded toward the periphery. *Right eye.* The

¹⁴ Archives of Ophthal., Vol. x, 1881, p. 91.

¹⁵ Trans. Amer. Ophthal. Sec., 1881, p. 262.

same changes were present, though to a less degree. By 5 P.M. of August 29 (second day) she was able to distinguish bars of light through the Venetian shutters. September 1 (fifth day), at a distance of 15 feet vision was clear over a surface 1 foot in diameter and indistinct over an area of $2\frac{1}{2}$ feet. She could tell blue and red letters in a motto across the room. On the seventh day she could distinguish all colors in a subdued light, but for the first time there was noted a marked diminution in the calibre of the retinal vessels. The condition looked like one of moderately advanced atrophy. September 4. The retinal vessels were not half their normal size. The cornea was not anæsthetic. September 6. Read Jaeger 8 easily without glasses. November 1. At a distance of 14" the vision of the left eye was: upward 8", downward $9\frac{1}{2}$ ", inward 8" outward 12". Vision = $\frac{2}{3}$. She could distinguish all colors, at the centre only. After an interval of twenty-two months, there was a total abolition of all sense of color except central color perception, which was perfect. Central vision was perfect. The nerves were both pale but not white. The arteries and veins were not more than one-third as large as normal. The arteries could not be traced as far as the ophthalmoscopic border and some of them had white bands for a short distance. Some of the veins, however, were not lost. Subjective sensations of light and after-images that were formerly quite troublesome were now only occasionally noticed. Buller assumed that the final changes had now been reached.

Case 25.—(Webster.)¹⁶ A man, 23 years old, had taken, seven years previously, during the course of a night, half a dozen large doses of sulphate of quinine. The next morning he was totally blind. He remained thus only a few hours, but he had never seen so well since. Vision, right eye, = $\frac{2}{3}$, with + $\frac{1}{8}$ C., axis 90°. Vision, left eye, = $\frac{2}{4}$; not improved by glasses. Ophthalmoscopic examination. Except that there were whitish bands running along the borders of the nasal branches of the left central retinal vein and that the optic disc of the same eye was slightly paler than it should be, both eyes were normal.

Case 26.—(Webster.)¹⁷ A lady, 40 years old, after frequent attacks of cholera morbus, had a very severe seizure of the same malady on July 25. Quinine was given *per rectum* until she had received 105 grs. (in doses at intervals of three hours). Next day its use was resumed, she was given 5 gr. doses every third hour up to 25 grs. whenever there seemed to be signs of the return of a chill. (She had also taken, as a tonic, 5 grs. of quinine daily ever since until January 13.) On the third day of her attack she became aware that she was blind and very deaf. Her hearing returned in a few days. The return of vision was gradual, but

it remained extremely imperfect. January 13, she could see a circle of light about a yard in diameter when she looked at a lighted lamp, or saw as if the light were shining through a thick fog. At first she only saw through the extreme outer corners of the eyes and not at all in front. Now, objects seen on either side were dark, while those in front were still outlines of golden light. Present condition. Right eye = $\frac{2}{100}$; left eye = $\frac{7}{100}$. The discs were perfectly white and the arteries were entirely obliterated and replaced by white lines. The very few minute retinal arteries had white lines along their sides. There were a few white, fleecy looking connective tissue changes in the retina near the disc and a mottled condition of the choroid. The pupils dilated downward and outward nearly symmetrically and there were deposits on the anterior capsules of the lens. She derived no benefit from treatment.

Case 27.—(Michel.)¹⁸ A man, 38 years old, took in twenty-four hours 40 grs. of sulphate of quinine. During the next twenty-four hours he took 50 grs. Then during the following night he took 220 grs. in powder. Part of this was not retained. Suddenly, at midnight, without pain, his vision became totally extinct, "just as if you had blown out a lamp." Deafness was not absolute. It lasted ten days, but he never regained his previous acuity of hearing. Four weeks later both pupils were widely dilated. Neither the strongest light nor sulphate of atropine affected them in the smallest degree. The optic discs were white with a slight tinge; the inner third (inverted image) somewhat darker in hue. Scleral rings were very marked. The *arteriæ centrales* were barely visible as minute threads, not traceable far from the origin of the disc. The veins were less than one-half their normal size. The choroids were pale. March 9 (five weeks), the arteries and veins were slightly increased in size and color. The patient thought he could perceive a slight glimpse of light. March 21, the retinal vessels were even more threadlike than at any time since first seen. By the following August (six months), he noticed that in certain positions he could perceive varying degrees of light. By the middle of October he was able to roughly locate an object held up before him. By November 1 he could read words in a newspaper. Since then the patient thought there had been no improvement. February 14, vision R. E. = $\frac{1}{2}$; L. E. = $\frac{1}{2}$. Both eyes together = $\frac{1}{2}$ imperfectly. Field of vision, tested at 1 metre: Right, in vertical diameter, = 23 cm.; right, in horizontal diameter, = 29 cm. Left, in vertical diameter, = 18 cm.; left, in horizontal diameter, = 24 cm. Pupils in the strongest light = 4 mm.; pupils in ordinary light = 5 mm. They responded slowly. Ophthalmoscopic examination: All of the retinal vessels had increased in calibre; the

¹⁶ Archives of Medicine, Vol. x, 1883, p. 338.

¹⁷ Archives of Medicine, Vol. x, 1883.

¹⁸ Archives of Ophthalmol., Vol. x, p. 214.

arteries were about one-third their normal size; the veins about one-half. The arteries could be followed two-thirds of their normal course. March 9, the field of vision was improved in both eyes. May 5, the field of vision unchanged in right eye, apparently a little less in left eye. Tested with Galezowski's *echelle chromatique*, he saw no color in grade No. 1 (No. 1 consists of very light shades of red, yellow, green and blue). In grade No 5, red and yellow were easily distinguished, blue with some difficulty, green not at all; violet looked like "dirty white." In grade No. 10, red, yellow and blue were promptly distinguished; violet was called purple; green looked like a mixture of green and yellow. In grade No. 15, red, yellow and blue were quickly recognized; green was not seen. (He acknowledged that before his blindness he did not know colors well.) June 1 (sixteen months). The field of vision was unchanged, likewise the size of the pupils, but they responded promptly to light. No changes were observed in the fundus of the eyes.

Case 28.—(Baumgarten. Reported at the same meeting at which Michel's case was related.)¹⁹ A boy, after taking what was estimated to be about 5 drachms of quinine, lost sight and hearing. He recovered in about six weeks.

Case 29.—(Knapp.)²⁰ A girl, 7 years old, had been treated for malaria three months previously and had taken a great deal of quinine. On the sixth day she became hard of hearing, and for four days could see nothing and the pupils were immovable. On the tenth day she saw fire in the grate. Improvement had been slow, and she continued to have weak sight, and she felt uncertain in walking. When Knapp saw her she could easily read Snellen xx at 20', and 0.25 at 8" with each eye, with moderate concentric limitation of visual fields. Color perception was normal. Both optic discs were white, the retinal vessels scant and very small, especially the arteries (February 16, 1878). May 11, 1879. Four months previously she again took quinine for malaria; no more, however, than 10 grs. in one day. From that time her sight was impaired. Knapp found S. $\frac{2}{100}$ in the right and $\frac{2}{100}$ in the left eye. She read 0.50 with difficulty, no improvement with glasses. She was green-blind. Field of vision was very much contracted; in the right eye almost to the point of fixation, in the left having a diameter of 15°, of which 5° were on the nasal, 10° were on the temporal side, from the point of fixation. The optic discs were white; the blood-vessels, especially the arteries, few and small. Now referred the disturbance to the influence of quinine. In May, 1881, her sight was $\frac{3}{100}$ in each eye. Emmetropia. She experienced no inconvenience from her eyes in any way. Her perception of color, carefully tested, was perfect. Her

light sense was normal; her field of vision, however, was contracted. The optic discs were white, with a faint pinkish tinge. Both arteries and veins were few and small, but none were white. The choroidal vessels, clearly visible, were normal in color, size and distribution. Otherwise the appearance of the *fundus oculi* was normal.

Case 30.—(Knapp.)²¹ A boy, 17 years old, had had "a terrible malarial fever from sewer-gas," four years previously. He was ill two weeks. After the first day he took large doses of quinine every third hour for a whole week. In the second week he took one large dose every day before the attack. The pupils dilated. On the tenth day he did not see anything; later, he gradually and very slowly recovered his sight, but he has been awkward and stumbling ever since. For two and one-half years nystagmus had been noted. Condition on examination: "Vertical vibratory nystagmus. Periodic divergence of the right eye; pupils move well. Optic discs white; vessels very small, some converted into white cords. V. R. $\frac{2}{100}$; L. $\frac{2}{100}$. Recognizes colors correctly. Field of vision in both eyes concentrically contracted; in the right eye to a diameter of 20°; in the left eye, of 30°.

Case 31.—(Knapp.)²² A boy, 8½ years old, had cerebro-spinal meningitis when in his third year (mother's statement). He was brother to the preceding case. He took a great deal of quinine. When he came out of his stupor at the end of two weeks, he could not see anything, not even a bright light held before his eyes. After some weeks he began to see a bright light and very slowly recovered his sight, his eyes remaining weak for some years. When Knapp saw him, December 18, 1880, his optic nerves were pale, the left more so than the right; atrophic-looking. The retinal blood-vessels were abnormally small. He was myopic and read with — $\frac{1}{18}$ Sn. lxx at 20', and 0.50 near by, with each eye. Visual fields were moderately contracted and had the shape of a horizontal ellipse. June 8, 1881. Light sense normal; color sense carefully tested proved normal too, but he had some difficulty in recognizing contrast shadows and called the yellow shadow from a blue glass, brown.

Case 32.—(Saunders.)²³ A boy, 8 years old, who had been healthy previously, was taken ill September 15, with fever and vomiting. On the 16th he was ordered to take a 6 gr. capsule of quinine every second hour. The third capsule was rejected. No more was given until the next day, when he took doses of 12 grs. every second hour until three doses had been given; then, the stomach becoming irritable, 20 grs. were given by enema. The quinine was now withheld until midnight of the 17th, when 10 grs. were given by the mouth, but were rejected. This dose was

¹⁹ St. Louis Courier Med., November, 1880.

²⁰ Archives of Ophthalmol., Vol. x, 1881, p. 223.

²¹ Ibid. ²² Ibid.

²³ Mississippi Valley Med. Monthly, No. 11, 1882, p. 433.

repeated and, after its partial rejection, 20 grs. were given by enema. This was partially thrown off and 20 grs. more were administered by enema at 4 A.M. (The patient had been quite deaf for the past twenty-four hours. He had taken more than 100 grs. in three days.) Shortly after this hour he became more deaf and stupid and difficult to arouse. His respiration was labored and quite slow, only 4 or 5 per minute. His attendants becoming alarmed, active efforts at resuscitation were practiced, and he rallied in about one hour, but he was totally blind, not able to distinguish light from darkness. Deafness lasted thirty-six hours; blindness four days. Saunders also refers to three other cases of quinine amaurosis as having occurred in the neighborhood of Memphis during the past few years.

Case 33.—(O'Bryen).²⁴ A man, æt. 33 years, had high fever. A ship's surgeon attempted to reduce it by giving quinine; this was taken in doses of 25 or 30 grs. every second hour (January 6). On January 7, the patient noticed buzzing, deafness, dimness of vision and finally total blindness. On March 20, he remained totally blind. His pupils were widely dilated. There was no albuminuria. About twenty days later he was able to perceive a blue and white handkerchief at a distance of about 3 feet. At a later report, sight appeared to be slowly but steadily improving.

Case 34.—(Dewey).²⁵ A man, 22 years old, was seized with pneumonia. There was a prolonged cold stage, lasting some hours, during which his physician gave him $\frac{1}{2}$ oz. of sulphate of quinine in divided doses. A good deal of this was rejected by vomiting. In less than twelve hours he was totally blind and deaf. The deafness entirely disappeared in seven or eight days, but the blindness remained. After three months he could hardly distinguish night from day. His sight gradually improved, and at the end of eighteen months he was able to go about his farm and to attend to business a little.

Case 35.—(Bruns).²⁶ A young man, 24 years old, suffering from malarial coma, was given 480 grs. of sulphate of quinine within twenty-four hours. There was a sudden reduction of vision to light perception. The further course was not reported.

Case 36.—(Roosa).²⁷ Mrs. L. took for malarial coma, 30 gr. doses of sulphate of quinine, *per rectum* two or three times. Consciousness was restored upon the third day, when she was found to be unable to distinguish light from darkness. The pupils were dilated and the ocular conjunctiva greatly congested. For some time there was no improvement, and when recovery began, it was slow. After six weeks she could not see to walk alone but could distinguish, with difficulty, col-

ored objects in the room. She could count fingers 4 feet distant, but could not make out a letter. The ophthalmoscopic appearance were those usually seen in similar cases. Under the hypodermic use of strychnine there was much improvement. This patient had marked nystagmus and eccentric vision.

Case 37.—(Gruening).²⁸ A lady, 50 years old, took 30 grains of quinine on account of malarial intoxication. On the following morning she awoke blind and deaf. The deafness lasted until the evening and the blindness began to disappear the succeeding morning. Five days afterward she had a perfectly healthy fundus in each eye. Central vision was normal, but the fields were much contracted, not more than 30° in any diameter.

Case 38.—(Diez).²⁹ A boy, 6 years old, suffering from chronic malarial poisoning, took heavy doses of quinine. As the fever disappeared there developed divergent strabismus, more pronounced in the right eye. There was also exaggerated dilatation of the pupils. Vision in each eye diminished more and more until he could hardly distinguish light from darkness. The ophthalmoscopic examination showed perfect transparency of the refracting media. The optic nerve papillæ were pale and the retinal vessels very much contracted. Under treatment with strychnine there was very decided improvement during the thirty days he was under observation.

Case 39.—(Peschl).³⁰ A woman, 28 years old, had taken from 45 to 60 grains of quinine in six days. There developed suddenly symptoms of cinchonism, especially blindness and deafness. The former symptom lasted only several hours, the latter, two days. Five days afterwards central vision for colors had not returned. The field of vision was much restricted. There was extreme ischæmia of the fundus of the eyes. The papillæ were pallid, but circumscribed. There was slow but continuous improvement. Color perception returned, but fields of vision remained very limited. Nine months later the visual power was normal, but the field of vision for colors notably restricted. The fundus remained very anæmic, the arteries were accompanied by white streaks.

Case 40.—(Hobby).³¹ A young lady, 21 years old, had taken large doses of quinine for supra-orbital neuralgia. When seen by Hobby the right eye was apparently normal. The pupil of the left eye was widely dilated and not appreciably affected by light. The ophthalmoscope revealed intense ischæmia of both retinae. O.D.S. = $\frac{16}{xxxii}$; O.S.S. = $\frac{3}{cc}$. There was improvement under treatment, but the neuralgia becoming

²⁴ British Med. Journal, i, 1886, p. 823.

²⁵ Trans. Med. Assoc. of Missouri, 1882, p. 161.

²⁶ New Orleans Med. and Surg. Jour., June, 1888.

²⁷ Trans. Amer. Ophthalmol. Soc., 1887, p. 431.

²⁸ Transact. Amer. Ophthalmol. Soc., 1887.

²⁹ La Ophthalmologia Practica, Madrid, 2, 1883, p. 13.

³⁰ Ann. di Ophthalmologie, Vol. xvi., 1887-88, p. 421.

³¹ Archives of Ophthalmol., 1882, Vol. xi, p. 34.

severe and markedly periodical she was given 20 grains of sulphate of quinine in two doses one hour apart. Upon the fourth day following this she returned to Hobby with both pupils dilated to the utmost. $O. D. S. = \frac{16}{cc.}$; $O. S. S. = \frac{3}{cc.}$. The visual field was reduced to one-tenth of the normal. Both retinae were profoundly ischaemic. Quinine amaurosis recognized and stychnine administered hypodermically. There was rapid improvement; in ten days the acuteness of vision had returned to $\frac{16}{xx}$ in both eyes; the visual field in each had doubled. Six weeks later the visual acuteness remained unchanged. The visual field had increased but was still less than half the normal.

Case 41.—(Nettleship.)³² A man, 26 years old, who had been ill with fever in Western Africa toward the end of Summer. Before leaving the Coast or during the early part of the voyage he took $7\frac{1}{2}$ grains of sulphate of quinine, in divided doses, daily, for two days, and on the third day he took the same amount in a single dose. His sight rapidly became dim during this day, so that he could neither read nor see distant objects clearly. He took no more quinine. His sight improved, but had not entirely recovered when Nettleship saw him, three weeks later. He informed N. that two years previously he had dimness of vision for a single day while taking quinine.

Case 42.—(Nettleship.)³³ A man, 29 years old, had had Congo fever in June (22d). For this he took immense doses of quinine. Three days later he discovered that his sight was very bad. He quickly recovered from his fever and started for home. By July 3d he was able to read. Nettleship saw him August 19th. Visual acuteness was nearly normal. There was very marked contraction of the field for colors, especially for red and green, the color, as a rule, being only recognized when close to the center. Though vision was almost perfect it was not quite so in bright light, and early in the morning he saw everything as through a mist. The optic discs were rather pale all over and the neighboring parts of the retina slightly hazy. The arteries were decidedly diminished, the veins normal.

Case 43.—(Dojne.)³⁴ A patient, in whom blindness supervened in the night while he was taking large doses of quinine. The arteries were contracted to mere threads and scarcely conveyed blood beyond the disc. Complete blindness lasted for several days. Vision was slowly recovered, but the fields of vision were still very contracted. Though the accident had occurred several months previously the arteries remained contracted and the discs were still whitened.

Case 44.—(Dickinson.)³⁵ A boy, 10 years old, had ague, August 3d, 5th and 7th. During the intervals his father gave him about 30 grains of sulphate of quinine. On the 11th he complained of feeble vision and darkness. On the 13th vision was so diminished that he could hardly see to eat. His vision continued to decline and in a day or two he lost all perception of objects, and even of the light of day. Occasionally he perceived flashes of red light and had pain in the occiput. This extended forward on each side to the external canthus. There was also pain in the neck and back. When Dickinson saw him, August 22d, he was totally blind. The external appearance of the eyes was normal. The pupils were dilated and not responsive to light. All dioptric media were intact and transparent, but there was marked congestion of the retinal and choroidal vessels, together with a remarkable tumefaction of the optic disc, it appearing swollen and pushed forward prominently with the vitreous. Its condition was very similar to that denominated "stauungs papille," "choked disc," the usual concomitant or resultant of neuroretinitis. A stasis of blood had been occasioned, in which the lamina cribrosa had especially participated. Under treatment, quite good vision had been regained in ten days, and two weeks later advices were very encouraging. Vision returned first in the right eye, which had also been the first to be affected. It was stated that the boy's mother had had a similar experience.

Case 45.—(Browne.)³⁶ A powerful man, 34 years old, who had had syphilis in 1877, was seized with pneumonia on January 4th. On January 6th, his temperature being 104° F., he was ordered to take 10 grains of sulphate of quinine every sixth hour. January 9th, temperature 105 F., the dose of quinine was increased to 30 grains every second hour. He thought he took about 120 grains. On the afternoon of the 7th he became deaf, and remained so about twenty-four hours. About 4 P.M. there was a flickering before his eyes and his sight went, "exactly as if you had turned out the gas." He could tell the difference between sunlight and darkness by the periphery of the left retina. Centrally he could not do this. The pupils were widely dilated. He could not see the flame of a candle. Six weeks after his attack his sight began to return. Recovery for central vision was rapid. March 24th Messrs. Power and Vernon saw him at St. Bartholomew's Hospital. Both optic discs were white, the vessels small and contracted. The left pupil was slightly the larger. Both acted slowly to light and to accommodation. Vision: Right eye = $\frac{2}{5}$ Sn. $1\frac{1}{2}$. All colors had a dirty, faded look. Left eye, $\frac{5}{8}$ Sn. $1\frac{1}{2}$. He named and matched colors pretty correctly. The fields were much con-

³² Transact. Ophthal. Soc. Unit. Kingdom Vol. vii, p. 218.

³³ Transact. Ophthal. Soc. Unit. Kingdom, Vol. vii, p. 219.

³⁴ Ibid.

³⁵ St. Louis Med. and Surg. Jour., Oct., 1881, p. 352.

³⁶ Transact. Ophthal. Soc. United Kingdom, Vol. vii, p. 193.

tracted. There was a small area of perception of white on the outer periphery of the left field. Field for color limited to the *fovea centralis*. Browne saw him on April 19th. Pupils $3\frac{1}{2}$ mm, equal, acting to light and to accommodation. Central color vision quite perfect. Vision: R. $\frac{2}{20}$ $\frac{2}{20}$ 2; 1 Jaeger at 12" fluently. L. $\frac{2}{30}$ 5 $\frac{2}{20}$ 2; 1 Jaeger at 12" fairly. Slight paresis of left internal rectus; optic discs pale; vessels remarkably small and contracted. There were no other changes in the fundus. Dec. 4th. There was scarcely any change, except slight failure of vision in the left eye. V.: R. = $\frac{2}{20}$ 6. L. $\frac{2}{20}$ 4. When reading 1 Jaeger with the left eye the letters danced (slight weakness of internal rectus?). The fields were unaltered. He could distinguish a light thrown from a small mirror up to the periphery of the retina. Very curious telescopic vision. Health was remarkably good.

Case 46.—Galezowski,³⁷ quoted by Browne.) Blindness occurred in a man who took 105 grains of quinine. It was complete. The patient could not see the sun. This lasted some days. Seven months afterward his vision = $\frac{2}{20}$ — 2 J. difficult. During convalescence he had central scotomata for awhile. There was no contraction of the field. The optic discs were pale and the vessels very contracted.

Case 47.—(Championiere—quoted by Browne.) A woman who took from 45 to 60 grains of quinine became completely deaf and blind, and could only communicate by touch. She recovered both sight and hearing.

Case 48.—(E. Williams—quoted by Browne.) A man took one ounce of quinine in four days, and became totally blind and deaf. Both sight and hearing were restored in six weeks. Hearing was permanently impaired. The optic discs were white and the vessels small. The vessels were contracted concentrically.

Case 49.—(E. Williams—quoted by Browne.) A boy, 14 years old, who took a large dose of quinine. He was totally blind for four days. The optic discs were white. The visual fields were contracted.

Cases of amblyopia from the excessive use of quinine have also been reported by Nucl,³⁸ Hixson,³⁹ H. C. Wood,⁴⁰ who mentions that he has seen complete temporary amaurosis produced in a lady by 12 grains of quinine. The subject has also received attention from Lopez,⁴¹ Masimiliano,⁴² and a number of other writers. Blindness has likewise been noted, as will be shown later, among the symptoms of dangerous and fatal general poisoning by quinine.

In the (more than fifty) cases of quinine amaurosis of which I have found records, the blind-

ness was absolute in nearly all, but, unquestionably, if careful research were instituted it would be discovered that impaired vision is not at all an infrequent symptom of cinchonism. Rogers⁴³ has already called attention to this phase. He asserts that after the ingestion of 20 grains of sulphate of cinchonine the following phenomena may be pretty constantly observed: In about one hour there are cardiac weakness and irregularity, and much debility with tremor. Paresis of visual accommodation progresses to such an extent as to be almost complete in many instances at the end of the second hour; at this stage even the emmetropic eye will require the aid of a No. 10 convex glass to properly distinguish objects at the normal near point. This paresis, he says, lasts eight or ten hours. Probably the great majority of cases of incomplete quinine amaurosis escape observation and record. Briquet, who saw four such cases thus describes the evolution of the symptoms. Says this writer, the patient begins to complain of the light, and the effort to fix the eye upon objects is painful. There is a sensation like that produced by using strong glasses. The eye is brilliant. The pupils are usually normal and the conjunctiva not injected. There is, then, a slight degree of excitation of the optic nerve, analogous to that so often seen in the beginning of paralysis of the nerve. In a more advanced degree, patients see as through a mist. Objects seem small, or double, or are not perceived at a distance of 2 or 3 metres. Finally incomplete amaurosis may occur, when the pupils become dilated, insensible to light. Briquet quotes Monneret as also having seen four cases of this incomplete amaurosis. A number of the cases here presented in synopsis were examples of incomplete blindness. For instance, Bruns' case was one of sudden reduction to perception of light, so was that of Diaz. Nattleship had a case in which, after doses of $7\frac{1}{2}$ grs. of quinine taken in two doses daily for two days and a similar dose taken on the third day, the sight rapidly became dim, reading became impossible and distant objects were seen indistinctly. This patient had two years previously had indistinctness of vision after taking quinine.⁴⁴ In most cases the blindness develops suddenly. More than once it has been described as occurring "just as if a lamp had been blown out." In many cases, however, vision fails much more gradually. Blindness generally becomes complete within twenty-four hours, though in some cases several days may elapse before this occurs. The duration of total blindness, the absence of all perception of light, varies within wide limits, from a few hours (Peschl, Webster, *et al*) or a day or more (Briquet, Baldwin, Buller, Gruening, *et al*) to several, even many, weeks (three, Gruening; five, Michel; ten, Voorhies; nearly

³⁷ Les Amblyopies Toxiques, 1877, p. 148.

³⁸ Nagel's Jahresber, 1871.

³⁹ Leavenworth Med. Jour., 1869-70, iii, 215.

⁴⁰ Therapeutics, Materia Med. and Toxicol., 1877.

⁴¹ Recueil d' Ophthalmologie, Paris, 1888, x, 79.

⁴² Osservatori, Torino, 1888, Vol. xxxix, p. 32.

⁴³ Alienist and Neurologist, 1882, Vol. iii, p. 445.

⁴⁴ Loc. cit.

three months, Dewey). In most cases perception of light returns within a few days. I can find no case recorded where blindness remained absolute. In all sight is recovered, though often slowly, and nearly always imperfectly. Six months after the beginning of blindness one of Gruening's cases was still partially color-blind and the fields of vision remained contracted. During the greater part of the first year one of McLean's patients "could look steadily at the sun without seeing it or even without any painful sensation being produced." In one of Roosa's cases the visual fields remained contracted, the optic discs pale, and the arteries small. In another the patient, whose vision was said to have been perfectly normal previously, felt, after two years, as if there had been a veil over her eyes, and she could not tell if her linen was clean as it came from the wash. She was also unable to distinguish certain shades of dark blue. In Voorhies patient the optic discs remained perfectly white after nearly a year, and there was no trace of the central artery, except a small twig. The visual field was greatly contracted. After an interval of twenty-two months, Buller found in his patient a total abolition of all sense of color, except by central perception. Central vision was perfect. The nerves were both pale, but not white. The arteries and veins were not one-third as large as normal. Webster reported a case, where, seven years after the beginning of blindness, which was total only a few hours, the sight remained impaired. Browne states that in one case the visual field remained contracted after fifteen years. In nearly every case where the condition of the sight was accurately determined some damage to vision remained when the patient was last observed. As regards peripheral vision the blindness remains permanent. Central vision gradually returns to the normal after some days, weeks or months (Gruening).

The exact nature of the eye affection has been carefully studied by Voorhies, Roosa and Ely, Gruening, Knapp, Buller, Webster, Michel, Browne and other ophthalmologists, and we are able to-day to recognize in quinine amaurosis a pretty well-defined symptom—complex. This is constituted by 1. Transitory blindness, complete or incomplete, usually developing suddenly. This blindness may be more complete than in any other recoverable condition, and is comparable to the blindness of atrophy (Browne). 2. Color-blindness. As sight begins to return most cases will be found to be color-blind, completely or partially. The color sense gradually returns and may ultimately become restored. In some cases the diminution of light sense is permanent. 3. Wide dilatation of the pupils. The pupils are irresponsive to light, but are said to respond to accommodative effort. It is to be inferred that the dilatation is due to the blindness, and that

there is no implication of the third or sympathetic nerves. 4. There is pallor of the optic discs and extreme diminution of the retinal vessels, both veins and arteries. In many cases this is permanent. In cases examined early by the ophthalmoscope, a whitish haze, with cherry-colored spots, has been observed at the maculæ, as in cases of embolism (Browne, Buller, Gruening). 5. There is contraction of the visual field. This is extreme and expands slowly. There is no reliable evidence that it ever regains its normal extent. "The contraction is concentric or elliptical, with the longest axis in the horizontal direction." (Knapp.) Impairment of hearing (at times to total deafness) with *tinnitus* appears to be present almost invariably. It is rarely complete more than twenty-four hours and gradually disappears. Some variations from this type have been noted. Voorhies' patient had anæsthesia of cornea. Diez, Knapp and Browne observed divergent strabismus. One of Roosa's cases had marked nystagmus; likewise one of Knapp's. Dickinson noted in his patient "marked congestion of the retinal and choroidal vessels, together with a remarkable tumefaction of the optic disc, it appearing swollen and pushed forward prominently with the vitreous. Its condition was very similar to that denominated 'stauungs-papille,' 'choked disc,' the usual concomitant or resultant of neuro-retinitis." This is a striking variation from the, otherwise, universal experience, and it may not be impossible that the symptoms in this case were expressions of malarial intoxication, such as are occasionally observed.⁴⁵ Taken altogether the symptoms of quinine amaurosis are strikingly definite and constant. Knapp's first case appears to show that relapse may be excited by quite small doses. One of Nettleship's patients exhibited the predisposing idiosyncrasy in its extreme degree, his sight being seriously damaged by 23 grains of quinine administered during three days two years after he had been similarly affected by quinine.

The pathogenesis of quinine amaurosis is by no means understood. Browne remarks that the subjective symptoms and ophthalmoscopic appearances resemble those of embolism of the central artery or hæmorrhage into the optic nerve, but that the bilateral occurrence and complete recovery of central vision refute this theory. He considers the anæmia of the retina to be local and that the occlusion of the arteries is probably not retro-ocular and is not complete, or atrophy of the optic discs would have occurred, as it does after embolism. There is no sign of perineuritis. There is no pressure. Buller, who thinks that the seat of the morbid changes is the optic nerve between the chiasm and the eyeball, notes that a galvanic current applied to the optic nerve of a

⁴⁵ Ledda. Temporary Bilateral Amblyopia in Consequence of Malarial Poisoning. Lo Spallanzani, 1885, Vol. xiv, p. 201, *et al.*

rabbit will speedily induce a blanching of the retina and nerve similar to that which occurs in quinine blindness. He details an example where, by the same means, he accidentally produced a similar picture in the human eye. The needle, introduced back of the orbit, he thought, must have penetrated the optic nerve. After the application had lasted one and a half minutes the pupils became widely dilated and the patient averred she could not see. A few minutes later the vision in this eye was reduced to counting fingers at a distance of one foot. The retina whitened to the disc and macular region. The arteries were slightly reduced in calibre and the nerve was decidedly pale. The retina cleared up in a few days, but the optic nerve remained very much blanched and the arteries small. The diminution of vision, which finally settled down to $\frac{2}{200}$, appeared to be uniform. There was no concentric limitation of the visual field and no color-blindness. Buller attributes the sudden blindness in cinchonism to a rapid effusion into the lymph spaces around the nerve, producing an external strangulation, too transient to produce the phenomena of papillitis, but sufficient to produce oedema and blanching of the retina, and a permanent impediment to the blood-carrying capacity of the central arteries.

The dose of quinine sufficient to produce blindness is very indeterminate and largely depends upon idiosyncrasy. H. C. Wood has seen complete temporary blindness following the ingestion of 12 grs. Nearly always, however, the doses must be very large. Briquet thought that troubles of vision did not occur ordinarily until, for several days, doses of 1.5-2 grams (23-30 grs.), or for a single day doses of 3-4 grams (45-60 grs.), had been given. On the other hand, enormous doses sometimes fail to affect vision, though blindness always results when the dose has been lethal. Taussig⁴⁶ mentioned a dose of 1 oz. of sulphate of quinine given to a soldier suffering from ague. The only results were complete deafness and a kind of stupor, followed by recovery. Bryce⁴⁷ saw a child 2 years old, to whom 12 grs. of quinine were given daily for four or five days. Great prostration resulted, with unilateral paraplegia, great oppression, pallid, cool and clammy skin, but no blindness. Barlow tells of a lady with severe congestive fever who took 40 grs. of sulphate of quinine every two hours for ten doses, or 400 grs. within twenty hours, without suffering from any injurious effects of the quinine, and who made a good recovery. Without doubt immense doses of quinine are frequently taken without disastrous consequences and, while blindness may be always expected in case of lethal poisoning, it is impossible to fix within definite limits the non-lethal doses that may be expected

to induce it. It unquestionably largely depends upon idiosyncrasy, and although it hardly ever develops except after the ingestion of large quantities of the drug, and even then with the greatest absolute rarity, the results are so terrible, that even the remote possibility of its occurrence should have influence in placing some check upon the lavishness with which quinine is but too often used in the treatment of disease.

QUININE DEAFNESS.

While *tinnitus aurium* and temporary diminution of the sense of hearing are the earliest and most characteristic symptoms of cinchonism, it is not a little remarkable that permanent alteration of the organs of hearing is very uncommon. So far as I have been able to ascertain, permanent complete deafness from quinine has never been recorded; indeed, complete temporary deafness is exceedingly rare. Briquet⁴⁸ saw but two cases. Giacomini and Guersant⁴⁹ relate one case in which, after a single dose of 12 grams (180 grs.), there was complete deafness which only disappeared after several days, and another case, after taking 41 grams (615 grs.), in which hearing was restored very slowly. Records of incomplete temporary deafness from quinine are, of course, common enough, the symptom belongs to the ordinary pharmacology of quinine, but complete temporary deafness without concurrent amaurosis has but the scantiest authentic record. Joseph Williams⁵⁰ has noted such cases, in one of which hearing only began to return after three weeks and was never entirely restored. The patient was able to hear only those who addressed her in a very loud tone. Although there is a widely prevalent popular impression that quinine exerts a damaging influence upon the auditory apparatus, there is a singular dearth of definite proof that this action may be permanent. Most of those who prescribe quinine freely and in full doses are ready to declare that they have never witnessed such results, although every one admits that the drug most readily temporarily increases the difficulty of hearing of those who are already partially deaf. In a number of the cases of quinine amaurosis, however, the accompanying deafness never entirely disappeared, and popular opinion has received important confirmation in the declaration of a number of most competent authorities that quinine may be the cause of permanent aural defect; such writers, for example, as Roosa, Burnett, J. Orne Greene, Kirchner and others have so expressed themselves. Graefe, Hammond and Roosa early declared that hyperæmia of the auditory apparatus followed the ingestion of quinine. Roosa found that there was decided congestion of the blood-vessels which run along the *manubrium* in the *membrana tympani*. These vessels are intimately

⁴⁶ Med. Times, April 23, 1864.

⁴⁷ Medical Herald, Vol. iv, p. 441.

⁴⁸ Op. cit., p. 140.

⁴⁹ Dictionnaire de Méd., 2me edition. Art. Quinine. p. 567.

⁵⁰ Lancet, i, 1840, p. 639.

connected with those of the middle ear. The blood-vessels of the tympanum are also in direct communication with the circulation within the labyrinth. From the close connection between the vascular systems of the tympanum, the membrana tympani and the labyrinth, and from the appearance of congestion as the direct result of 10 and 15 gr. doses of quinine, we have evidence that the effect upon the ear is congestive rather than anæmic; but as the congestion visible is slight and disproportionate to the intensity of the tinnitus aurium, it seems reasonable to conclude that the congestion of the greater cavities is greater (J. Orne Greene).⁵¹ In a most instructive article upon the same subject, Burnett⁵² states that if to a healthy man from 15 to 120 grs. of quinine be given, a watch will only be heard at contact and bone conduction is abrogated. The membrana tympani assumes a hazy look, due to the intense congestion of the mucous surface of the drum membrane. The participation of the labyrinth is shown by inhibition of bone conduction and by inability to hear high notes by aerial conduction, or by a very limited power of perceiving them. This impaired power is due to the congestion in the lower whorl of the cochlea, where the nerve fibres for hearing for high tones are supposed to be. Important confirmation from experiment has been supplied by Kirchner.⁵³ Upon examining the labyrinth of a cat after large doses of quinine, Kirchner found hyperæmia and excessive extravasation of red and white blood cells extending from the *vas spirale* over parts of the *sulcus spiralis*, the auditory pillars, Corte's arches and the *membrana basilaris*. In three of ten rabbits he found, under similar conditions, extravasations extending from the semicircular canals to the vessels in the surrounding osseous substance in the temporal bone (Burnett). Greene, Roosa and Burnett are all convinced that great injury to the hearing is often produced by the drug, and in occasional cases the changes are no longer limited to simple hyperæmia, but otitis has been produced by it (Roosa,⁵⁴ Burnett).

Very singularly, the effects of quinine upon the sight and hearing appear to be attributable to two quite opposite conditions. Upon the ear the action is decidedly hyperæmic, upon the eye it is even more pronouncedly anæmic. How these changes are induced is quite unknown. It is generally assumed that they depend upon influences exerted through the vaso-motor centre. Regarding the ear, Kirchner concludes that the cause of the pathological changes after quinine is probably a vaso-motor disturbance whereby not only transitory alterations are excited, but also a paralysis of the vessels with congestion and exudation in the different parts of the organs of hearing. With

this condition of the aural blood-vessels and the narrow contraction of the retinal blood-vessels concurring, it seems difficult to refer the alterations to a central vaso-motor lesion. It is altogether more probable that the vaso-motor effects are local. It should be noted that the blindness is not necessarily associated with deafness. In some instances (few indeed), amaurosis has been present with little or no aural disturbance (Roosa, Voorhies).

GENERAL POISONING FROM CINCHONA PREPARATIONS.

Doses of cinchona alkaloids that are sufficient to produce complete deafness and blindness are often the cause of general symptoms of an alarming, even dangerous character. Bochefontaine,⁵⁵ arguing from results obtained in animals, concludes that in order to place the life of a man in jeopardy, 10 grams (150 grs.) of sulphate of quinine must be injected under the skin, or 16 grams (240 grs.) of sulphate of cinchonine administered in the same manner. He estimates the lethal dose by the stomach to be 35 grams (525 grs.) of quinine, or 50 grams (750 grs.) of cinchonine. These doses, however, exceed the amounts that have been known to produce death. I have already detailed a case of Baldwin's, where a negro girl died after convulsions produced by 20 grs. of sulphate of quinine given in forty-eight hours. This dose appears almost too small to be followed by such results, but the symptoms (described in 1847) tally so closely with those of more recent observations, that Baldwin's claim would seem to be well founded. Briquet reports two fatal cases, in one of which death followed the administration of 100 grs. in two days. The other patient (from Recamier) took nearly 120 grs. in doses of 5 grs. repeated every hour. Nevertheless it is pretty safe to assert that in order to produce death from quinine, enormous doses are necessary. Voorhies'⁵⁶ patient, it will be remembered, took an ounce within a few hours, and an equal amount was given each day for two days by stomach and rectum. She was in a critical condition for some hours, but recovered. The soldier who took one ounce at once with but unimportant consequences has also been referred to. It is certain, however, that doses that may prove dangerous are frequently prescribed and taken with reckless freedom. The practice has elicited protests from a number of writers. Dr. A. A. Smith⁵⁷ has written a vigorous paper upon this subject. J. Williston Wright relates several cases illustrative of the peril following excessive doses. One of his patients was a child 10 years old who took within twelve hours 25 grs. of sulphate of quinine by the mouth and 25 grs. by the rectum. Within two hours after

⁵¹ Boston Med. and Surg. Jour., Vol. cviii, p. 220.

⁵² Polyclinie, Vol. iii, 1885-86, p. 54.

⁵³ Berliner Klin. Wochenschr., No. 49, 1881, p. 727.

⁵⁴ Treatise on the Ear, third ed., p. 155.

⁵⁵ Comptes rendus des Séances de l'Académie des Sciences, No. 96, 1883, p. 503.

⁵⁶ New York Medical Journal, Vol. xxxix, 1884, p. 115.

⁵⁷ New York Medical Journal, Vol. xxxix, 1884, p. 116.

the last dose, the child fell into a state of collapse, with a temperature of 93.9° F., a pulse of 60, very weak and intermittent, a respiration of 32, shallow and gasping. The face and lips were cyanosed, the skin cool and moist. Recovery followed. Even small doses may produce in some predisposed individuals symptoms that excite alarm; and no reference is made here to the distressing and violent seizures following even the smallest doses in some persons, in whom severe acute gastric catarrh, extensive cutaneous eruptions, active circulatory disturbances are observed. Lente,⁵⁸ for example, records a case where two small doses of calisaya elixir threw the patient, a woman, into a comatose condition. She had cold extremities, a hot head and symptoms of cerebral congestion. Lente relates other similar cases. A number of the cases detailed in the foregoing pages also presented alarming general symptoms.

In more severe cases the patients may pass into a condition bordering upon collapse. There will be extreme prostration, with or without loss of consciousness, or coma, lowered temperature, gradual weakening of the pulse and respiration, and chilling of the entire surface, copious cold sweating, deafness, dilatation and immobility of pupils, blindness, lividity or cyanosis of the countenance. Convulsions have occurred in a goodly number of reported cases. Both of Baldwin's cases had them; one, however, without losing consciousness. In this man, they began with a jerking of the whole body and great restlessness, anxiety and alarm. The convulsive movements came on every ten or twelve minutes, sometimes of the whole body, at other times of the arms. Briquet quotes Talbot as having seen convulsions follow very large doses. Pereira⁵⁹ records among cases of typhoid fever treated with 4 grams (60 grains) of sulphate of quinine daily, four who developed epileptiform fits. Gruening's patient, who took 80 grains in 36 hours, had convulsions shortly after the last dose. These were characterized by twitchings of the facial muscles and jerking of the upper and lower extremities. Although the patient denied all knowledge of the fits, Gruening thought that she did not lose consciousness during them. Similar extreme action has been noted by Ghose.⁶⁰ The patient was a Hindu female, 35 years old, who took, for remittent fever, 20 grains of quinine in four pills, one hourly. After the third pill she became insensible and convulsive movements of the limbs set in. After two hours she remained insensible, lying on her face with both hands clinched. Her eyeballs were turned upward and her pupils dilated. The muscles of mastication, of the arms, hands, and lower extremities in a condition of tonic con-

traction. The reflexes of the soles, palms, and even of the conjunctivæ, were abolished. The woman had never been hysterical.

Fatal cinchonism has very rarely been observed. Several such have already been referred to; within a few years two very interesting accounts have been published, the one, a case of poisoning by sulphate of cinchonidine (Winters), the other by sulphate of quinine (Lamb). Winters'⁶¹ patient was a cachectic boy, 5 years old, who had remittent fever. By mistake he was given 32 grains of sulphate of cinchonidine every second hour until 128 grains had been taken within six hours. None was rejected. Winters saw him one hour after the last dose. He had then had three general convulsions of an irregular character. The temperature was 94.6° F., the pulse almost imperceptible at the wrist. By auscultation the cardiac pulsations were found to be 74. The skin and mucous surfaces appeared utterly bloodless. The pupils were dilated. The child was semi-conscious. The condition of sight and hearing was not noted. Despite stimulants, heat and friction, the boy gradually sank and died, apparently of exhaustion, eight hours after Winters first saw him after the poisoning. The necropsy revealed engorgement of the cerebral sinuses with dark, slightly coagulated blood. The brain was anæmic throughout. The left heart was contracted, but not firmly, and was empty. The right heart contained a small quantity of dark colored blood. Lamb's⁶² patient was also a little boy. He was 3 years old. He had found a package of eighteen 3-grain sulphate of quinine pills and had swallowed them all. After a few hours he died, apparently of syncope. At the necropsy several of the pills were found undissolved, and Lamb estimated the amount actually absorbed to be 42 grains. Curiously, the cardiac conditions post-mortem were exactly unlike those found in Winters' case. The heart was relaxed; the right cavities were empty, the left cavities contained a little fluid blood. It was also discovered that the child had a mild but unsuspected typhoid fever.

In the cases in which convulsions occurred it is not clear that they were dependent upon the "nervous perturbation" that is so often seen in cinchonism. Comparative experiments upon animals show, however, pretty definitely that while quinine cannot be considered a convulsivant in the same sense in which strychnine is held, convulsive movements of an irregular character are pretty constantly provoked. As long ago as 1847 Baldwin found, after giving large doses to dogs, at first great restlessness, then vomiting, and occasionally purging. Next followed tremulous movements with a constant motion of the head, resembling that of paralysis

⁵⁸ New York Med. Record, Vol. xiv., 1878, p. 388.

⁵⁹ *Emploi du sulfate du quinquina a haute dose.* Thèse, Paris, 1841.

⁶⁰ Indian Medical Gazette, Vol. ii, 1881, p. 337.

⁶¹ New York Medical Journal, Vol. xxxix.

⁶² New York Medical Journal, Vol. xxxix, p. 549.

agitans. There was loss of consciousness, followed by complete paralysis of the hind extremities. In every case, where the doses were sufficient to produce death, except one, convulsions were observed. Bochefontaine's researches led him to the conclusion that both cinchonine and quinine are convulsivant, the latter less so than the former. This author, with Sée,⁶³ attributes a similar physiological action to cinchonidine, and quotes Chirone and Curci⁶⁴ as entertaining similar views. According to Soulier⁶⁵ the first effect of quinine is to produce an acceleration of the pulse, then, after a variable time, according to dose, to slow it. In warm blooded animals the first phenomena observed are lateral movements of the head, accompanied by general enfeeblement and incoördination of movements. The enfeeblement becomes pronounced, and vomiting occurs. The animal sinks down upon its thorax and neck and then, but only in a certain number of cases, epileptiform and even tetanic spasms occur. These, however, may be only secondary. Brunton,⁶⁶ who has seen epileptic convulsions apparently caused by medicinal doses of quinine, acting through a stimulation of the motor centres, explains that in fatal poisoning the animal dies in convulsions consequent on stimulation of the nerve-centres by the venous condition of the blood produced by failure of the respiration. The loss of voluntary and then of reflex movement indicates that quinine acts upon the nerve-centres in gradually abolishing their function. In the fatal poisonings from quinine, the vagus nerve becomes paralyzed and death occurs through failure of respiration, and only occurs through cardiac paralysis if the drug be injected into the blood in large quantities. Douvreur's experiments with animals with sulphate of cinchonidine show that after lethal doses the heart slows and the blood-pressure progressively diminishes and reflex movements gradually grow feeble and are finally abolished, at the same time with the respiratory movements.

While it may be freely admitted that the dangers of lethal poisoning by quinine are very remote, it is certain that not sufficient attention has been given to some of the graver consequences that may follow its administration. In addition to the blindness and deafness which we have already considered, might probably be added abortion as a possible result of cinchonism. As, however, the oxytonic action of quinine has not as yet been determined satisfactorily, this aspect of the question will not be introduced at the present time.

DR. LYSTER, of Detroit, remarked regarding

the use of quinine in large doses, that he quite agreed with the doctor preceding him that only such portion of the dose as was required to neutralize the malarial intoxication was appropriated; any excess of dose was eliminated from the system usually without any markedly injurious effect. He believed that quinine was strongly antiseptic, and that the combination of alkalies and mercurials on account of the ptomaines and leucomaines existing where the quality of the bile was so inferior as it generally is in cases of malaria, then we have passive congestion of the liver and a lessened alkalinity of the bile. The conditions are quite similar to that observed in cirrhosis of the liver. The very large doses frequently repeated will not be required if such other valuable antiseptics be exhibited at the same time. The hypodermic use of the quinine should be made in suspected cases of the congestive or malignant variety in regions where such cases were met with.

DR. W. J. SCOTT said that the doses of quinine should be in size suitable to the necessity for its administration. He thought excessive dosing of quinine may do harm.

DR. DE SCHWEINITZ, of Philadelphia, had a case under his care in which amaurosis was caused by 12 grains, and lasted several hours. There is a case recorded by a French writer of a soldier who took over an ounce. Safety depends upon the precipitation in the intestine by alkaline juices of an acid salt.

SUSPENSION AND EXTENSION IN THE TREATMENT OF SCIATICA. A NEW USE FOR AN OLD INSTRUMENT.

Read in the Section of Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association held at Newport, R. I., June 25, 1889.

BY CHARLES C. HUNT, M.D.,
OF DIXON, ILL.

So unsatisfactory have been the results of the various methods of treatment of sciatica that any means whereby this painful disease may be cured, or even palliated, will be welcomed by professional men and laity alike. It has been my good fortune, in the past five years, to be able to give immediate and permanent relief in many cases of sciatica, especially of the chronic type, that had failed to obtain relief by any other means than those I am about to describe. The method is simple and, in my hands, has proved in the highest degree effective. I can better illustrate by the recitation of a few typical cases.

Mrs. K., a young married woman, no children, had pain along the line of the left sciatic nerve for over two years. It was so severe at times as to confine her to bed for several days, and at no time for many months had she been

⁶³ Comptes rendus des Séances de l'Académie des Sciences, No. 96, 1883, p. 1081.

⁶⁴ Rev. des Sciences Méd., Vol. xviii, p. 47.

⁶⁵ Thèse de Paris, 1883, p. 53.

⁶⁶ Pharmacology, Therapeutics and Materia Medica, 3d American Edition, p. 947.

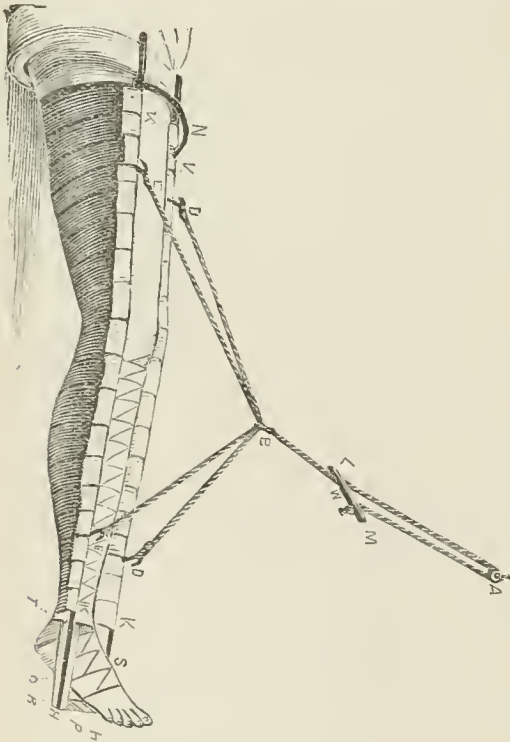
able to perform her ordinary household duties without great suffering. I saw her as an office patient in May, 1884. Her general health was considerably out of repair, owing to chronic endocervicitis, right lateral retroversion of uterus, chronic sciatica of the left side, and consequent anæmia. I was inclined to the view that the uterine displacement and cervicitis, with their attendant anæmia, stood in direct causative relation to the sciatica, and I accordingly placed her on ferruginous tonics and resorted to such local measures as the nature of the uterine disorders indicated. After several months her general health was much improved; the uterine troubles had disappeared, but the sciatica continued with little or no material abatement. I then subjected her for another two months to the usual routine treatment for chronic sciatica, with no better success. Prior to my seeing her she had been for about eighteen months under the care of a very able physician, from whose treatment she had derived but little benefit. Early in November, 1884, I was visiting another patient at this lady's house. She informed me, on this occasion, that the pain in her hip was worse, that her increased cares had kept her much upon her feet, and she had now become almost helpless from the paroxysms of pain, which tortured her during the day and deprived her of her rest at night. Almost in despair I said to her: "If you will lie in bed two or three weeks and submit to such treatment as I think proper, I may succeed in curing you. I am not sure how matters will turn out. I have never tried this before, nor do I know of anyone else who has. In any event, it will do you no harm." She was glad to submit to any reasonable means that offered the least promise of relief. I had it in my mind to see what could be obtained by rest and extension, and as I had a Hodgen's splint at hand, it occurred to me that these, together with suspension, could be very readily gained by means of this most excellent apparatus. I accordingly adjusted this splint in the usual manner. In a few hours the pain had entirely ceased. She enjoyed the first good night's rest in over two years. At the end of a fortnight I removed the splint and permitted her to get up; but as a precautionary measure I left the adhesive straps remaining, so that at night, or in case of return of pain, she could attach a ten or twelve-pound weight to the limb by means of a cord passing over a pulley at foot of bed, in same manner as we ordinarily make extension in fractures of the lower extremities. This she kept on for three weeks longer, attaching the weight at night. The result was all that could be desired; the pain never returned after the first day. She was discharged cured at end of five weeks. I had the privilege of examining patient quite recently. She informed me she had been perfectly well of the sciatica ever since the splint was removed, nearly five years ago.

Henry C. M., a young unmarried man of very irregular habits. Had been a debauchee and lain out nights in a state of drunken stupefaction. Some two years prior to my seeing him, had contracted a severe form of sciatica. Upon examining him, stripped, I found marked atrophy of muscles of left thigh and leg, mobility of the limb much lessened, extreme tenderness on pressure over line of sciatic nerve, general health tolerably good. Had been under all sorts of treatment by all sorts of persons without deriving any material benefit therefrom. He was making a desperate effort to reform. His circumstances, he thought, would not admit of confinement in bed, and insisted that I try other means first, in hopes that he might obtain relief without being subjected to so severe an ordeal as the wearing of a splint necessarily implied. The interrupted faradic current, massage, nerve stretching, deep local injections of ether, etc., etc., together with such internal medication as suggested itself from time to time during a period of several weeks, were followed by only temporary alleviation. He finally consented to have splint applied, which was done March 11, 1886, at his home twelve miles distant. The first few hours gave great relief, but the dragging pain during the night became so intolerable that he telegraphed me next morning to visit him without delay. Arriving at his bedside, I found that too much tension was the cause of the difficulty, and as soon as this was lessened to a proper degree by the removal of the bed a few inches in the direction of its foot, the trouble ceased. He wore the apparatus two weeks, and kept up extension at night four weeks more, when he was discharged cured. I examined him about a year afterward, and found that the atrophy had almost entirely disappeared, his sciatica had not returned, and he had obtained perfect use of the limb. Some months after this he felt so jubilant over his restoration to health that he "took a drink with a friend." This was the initial step towards a grand spree, which lasted until his death, some weeks afterwards.

Mrs. S., a large, fleshy woman, 55 years old, always in good health except for the last year, during which she had suffered from sciatica, right side. October, 1885, applied the splint, which was removed after a fortnight. Extension by means of weight and pulley continued two weeks longer, at the end of which time patient was discharged cured.

W. C., blacksmith, sciatica left side, two and a half years' duration. Dipsomaniac. Acute attack, superimposed upon the chronic, caused by injury while shoeing a horse. Applied splint at once. Relief was immediate. Wore apparatus thirteen days, night extension two weeks. Discharged cured. I examined this case last week, that is, five months after removal of splint. He assured me he was entirely well.

Mr. S. Y. had been a severe sufferer from sciatica of right leg for over ten years. For last two years has been comparatively free from it, owing, as he thought, to three applications of a strong Faradic current. Was thrown from his wagon and sustained an injury of the right hip, inducing an acute attack of great severity. At first he would not consent to confinement on his back; insisted upon the use of electricity, as it had "cured him before." After gratifying his whim in this regard for several weeks, applied the Hodgen, February 1, 1889. By next day all pain in the hip had ceased. Wore apparatus fourteen days, night extension about ten days longer, when he removed the adhesive straps of his own accord. I am, at this writing, not fully informed as to the result in this case. He has called at my office several times since, but I happened to be absent each time. At the time I removed the splint, however, the progress was satisfactory.



EXPLANATION OF CUT.

K K, K K, the two arms of splint. E E, D D, sliding hooks on arms to which lateral cords E B E and D B D are attached. H H, cross-bar of splint, to which block covered by lateral straps is fastened by strap P. N, wire nail. A B, suspending rope passing over hook or pulley A, and returning is attached to itself by wooden "check" W. O and S, lower ends of arms. R, adhesive strap seen emerging from underneath roller at T and passing over block H H, is reflected upon leg on other side.

But to recite further would be only recapitulation. These cases are not selected ones. They are picked up at random from a list extending over a period of five years. No medicine of any

kind was administered to any of these cases during the treatment by suspension and extension, except an occasional laxative or cathartic. No opiates were required. In all, the relief was marked and decisive within from one to six hours after the proper adjustment of the apparatus. Recovery was completed in from two to six weeks, except, possibly, in the last one, the history of which I have just narrated as far as known.¹

The etiology, pathology, diagnosis and general treatment of this morbid condition do not fall within the scope and purpose of this paper. Doubtless these departments will have been exhaustively considered in the paper to be presented to this Section by Dr. Carpenter, of Kentucky. My purpose has been solely to present a few clinical facts which are new and interesting, to me at least, at the same time cherishing the hope that they may prove no less so to those to whom I have the honor to relate them. I will only add, in this connection, that from the first I was surprised and gratified at the results obtained by this simple procedure. Rest, suspension and extension are, it seems to me, the three cardinal points in the treatment of this disease; and after an experience of five years I have nothing to add to, or substitute for, the Hodgen splint, as the most feasible means whereby these objects may be fully secured.

The apparatus was devised by the late Prof. John P. Hodgen, of St. Louis, during the War of the Rebellion. Its object was to maintain apposition of the fragments in gunshot fractures of the thigh while the wounds were being dressed. Its use in simple fractures has never been general. It consists of a one-fourth inch iron rod, bent in two places at right angles, so as to form two nearly parallel arms united by a transverse bar (see "H H" in figure), and of sufficient length to reach from the hip-joint to about four inches below the sole of the foot. These arms are slightly bent at the knee, and the upper ends are kept apart by a heavy wire bail (N). Five or six strips of heavy muslin roller, from three to five inches in width, are passed from arm to arm underneath the limb. These are fastened by means of safety pins along the outer arm of the splint, from the bail to near the ankle, so as to allow the limb to rest upon them, as in a cradle. Care should be taken to see that these strips press equally all along the under surface of the limb. Two strips of Maw's mole-skin plaster are adjusted to the leg, as is usual for extension by means of weight and pulley; these straps are separated below the foot by the usual block, which latter is now made fast to the cross bar of the splint by means of a strong piece of adhesive strap at the point "P." From the sliding hooks "E E" and

¹ Since preparing this paper S. Y. came in (June 20th) and reported himself entirely well.

"DD" are two heavy cords, which are united at "B" by a three-sixteenths inch rope, which passes up over a hook in the ceiling and back upon itself, where it is attached by means of the well-known device represented in the figure at "LM." The limb is raised or lowered by means of the wooden check "W." The suspending rope, "AB," should form, with a horizontal line, an angle of about sixty degrees. To prevent the patient from sliding down in bed, the foot of the bed should be elevated about four inches.

The late Prof. Frank H. Hamilton, in his justly celebrated work on "Fractures and Dislocations," declares, in regard to Hodgen's and all other suspending apparatus, that "whatever other excellences they may possess, this (extension) does not belong to them." How this distinguished author could have incorporated such a palpable error in a work so carefully written, I shall not attempt to explain. That this "suspending apparatus," when properly adjusted, *does* produce extension, even to a degree greater than one can bear, I have seen demonstrated over and over again. In a case of oblique fracture of the thigh of a very muscular man, with two and a half inches shortening, I sat by the bedside and witnessed extension, by this means alone, of sufficient power, without any anæsthetic, to bring the fragments into place. Indeed, there is danger of obtaining too much extension, as I have already related. This unpleasant circumstance may be obviated by instructing the patient, in case the tension becomes uncomfortable, to slide a few inches toward the foot of the bed, or have the bed drawn a few inches in the direction of its foot.

In cases of adults, especially of those beyond the average length, the bed should be seven feet long and without any foot-board; otherwise the lower end of the splint will press against the foot-board and extension will cease.

The apparatus can be made in an hour by any ordinary blacksmith. The wearing of it produces no discomfort. The calls of nature can be attended to with the least possible disturbance. Patient may even sit in a reclining chair, while his bed is being put in order, and it will do no harm if the suspending rope is unhooked for an hour or so at a time, while the bedding is being changed, the patient, in the meantime, sitting in a chair with limb (in splint) resting upon another chair. It is well, however, not to remove tension for this purpose until after one or two days.

While this method may not prove absolutely successful in all cases and under all possible conditions, yet it has, in my hands, been followed by such uniformly good results that I feel warranted in commending it to the favorable consideration of all, and especially of those who, like myself, have failed to obtain satisfactory results by other means.

MEDICAL PROGRESS.

SURGICAL TUBERCULOSIS.—In a series of lectures recently delivered by Mr. HOWARD MARSH at the Royal College of Surgeons of England, he gives the results of his own experience in the treatment of this disease:

As regards the general group of tubercular diseases met with in surgery, when they are detected early and are adequately treated by prolonged rest, in not more than 10 per cent. do they develop to any formidable degree. It is a rule with but few exceptions in the lecturer's experience that when, for example, a knee or an elbow, which is the seat of tubercular disease of less than three months' duration, is enclosed in well-fitted splints and is kept at rest, the case gives no further real trouble, and improvement, though slow, goes on until the joint is apparently free from disease, while after a longer period of rest complete recovery is secured. The period required for treatment in early cases does not, as a rule, exceed twelve or eighteen months. In more advanced cases the same treatment will lead to good repair. The treatment adapted for hip disease has been that of prolonged rest, with weight extension. In cases of suppuration all abscesses have been opened as soon as detected. An incision from an inch to an inch and a half in length is made, matter is evacuated by gentle pressure, and a small drainage tube, just long enough to enter the cavity, is used for two or three days and antiseptic dressings are applied. In many instances the wound closes in two or three weeks, sometimes sooner; in others it becomes a sinus which discharges for a month or six weeks and then heals; in others still, suppuration remains free for several weeks, or even longer, and further openings have to be made; but at length, in a large majority of cases, the wound heals and no further suppuration, except in a very few cases, takes place.

Mr. Marsh proceeds to give an analysis of seventy-six cases which had been operated upon in the Alexandria Hospital, the patients having been summoned for inspection a year and upwards after operation. Of these seventy-six patients thirty-seven were cases which had supplicated and thirty-nine cases which had not supplicated. Among the thirty-seven there were two cases of double disease, and in the thirty-nine there was one double case. Of the thirty-seven suppuration cases only four still had sinuses, and these were all small and superficial. The general results were as follows: One was a perfect recovery, six were excellent, seventeen were good, thirteen were moderate.

Amount of shortening: Three no shortening; 17 less than an inch; 12 between 1 and 2 inches; 3 more than 2 inches.

Movement: One perfect; 10 free; 7 slight; 18 fixed; 1 not observed.

Walking: Two perfect; 22 well; 13 indifferently.

Of the 39 non-suppurating cases 9 were perfect recoveries, 9 excellent, 12 good, 9 moderate.

Shortening: Eight none; 19 less than 1 inch; 11 more than 1 inch.

Movement: Nine perfect; 10 free; 10 slight; 10 fixed.

Walking: Twelve perfect; 20 well; 6 indifferently; 1 not noted.

The lecturer believes his figures of results obtained to be typical and in marked contrast to those obtained after the operation of excision, the mortality in the former amounting to about 10 per cent., while at a moderate estimate the mortality of the latter exceeded 20 per cent. With these satisfactory results in view he feels like advocating conservatism in treatment, and the more so because the main defect of excision, after all, will lie in the ultimate result, as regards the usefulness of the limb. Thus, in children the immediate result of excision of the knee may be all that could be desired, while the ultimate result is unsatisfactory in that deformity ensues and the functions of the limb are materially interfered with.—*Brit. Med. Journal*, Aug. 3, 1889.

SECONDARY SYPHILIDES OF THE VAGINA.—M. BALZER (Congrès Internat. de Der. et de Syphil., Paris) dwells upon the importance of careful inspection of the vagina for the discovery of syphilides. For this purpose the examination should be preceded by vaginal irrigation. The vaginal ampulla is their favorite seat. The papular form is the more common, and it may be isolated or associated with the papules of the cervix. The eroded form is also met with in the ampulla in the form of macules or simple striæ with a reddish or whitish surface. Both forms usually heal quickly. When there are cervical plaques vaginal syphilides sometimes develop immediately upon contact, notably in cases of uterine anteversion. In the case of a prostitute who had had syphilis for more than four years there was a large mucous plaque of the vagina which developed in this manner, but which could only be seen after replacement of the uterus. The cervix was hypertrophied and ulcerated, but did not present a distinctively syphilitic appearance. It is reasonable to suppose that plaques may develop in syphilitic patients upon mere contact with a cervix that is the seat of a chronic ulceration. The papular or eroded syphilides are easily recognized and are scarcely to be confused with certain flattened vegetations or soft papular chancres of the vagina.

In the middle portion of the vagina syphilides are less frequent than in the ampulla. In one case there were ulcerations, apparently deep, which furrowed the vagina throughout the greater

part of its extent, but when the vaginal folds were carefully stretched out it was found that in reality the ulcerations were only superficial. In another case there was an ulcerous syphilide. The patient, who admitted having infected a person, was carefully examined a number of times with negative results. Finally, after an extremely careful examination, two ulcers were found midway in the vagina on the right side; they were concealed in folds of the mucous membrane, were circumscribed, with indurated borders, and bled readily. A mixed tonic treatment was ordered, but the ulcers healed very slowly. It is almost unnecessary to insist upon the gravity of vaginal syphilides in view of the contagious character of syphilis, but it is all the more important to search from time to time for manifestations of the disease in other parts of the body.—*La Semaine Méd.*, August 28, 1889.

CASES OF ENTERO-VESICAL AND ENTERO-TUBAL FISTULÆ.—F. P. KUTHE (*Weekblad v. h. Ned. tid. v. Geneeskunde*, 1889, No. 21), reports the case of a man 25 years old, who had long suffered from diarrhœa. All at once he noticed the escape of gas from the penis during micturition, at the same time fæcal matter appeared in the urine. The communication was probably with the ileum, since opiates did not prevent the appearance in the bladder of the fluid contents of the intestine, although they produced constipation. Colotomy was, therefore, not available. Direct operative closure of the communication appeared to be the sole remedy. The patient being syphilitic, an antisyphilitic treatment was tried, and, contrary to all expectations, was crowned with success. The following year the same condition reappeared, but yielded to treatment of mercury and iodide of potassium, the patient remaining cured at the end of seven years.

In the case of entero-tubal fistula, the first indication was the discharge of gases, and an irritating fluid from the vagina. The diagnosis was confirmed by the introduction of vaginal tampons moistened with salts of lead, the reaction with sulphuretted hydrogen being conclusive. The daily introduction of iodoform bacilli led to a moderate improvement.—*Cent. für Klin. Med.*, 1889, No. 34.

STENOSIS OF THE TRACHEA, FOLLOWING TRACHEOTOMY.—(*Virchow's Archiv.*, B. cxvi, H. 1.) A child of 3½ years that had been subjected, two years previously, to tracheotomy, was obliged to continue the use of the canula on account of suffocative attacks. Finally attacks of dyspnoea appeared during expiration, even with the canula *in situ*, and during such an attack the child died. In such cases of tracheal stenosis as this the chief symptom is the appearance of suffocation whenever an attempt is made to withdraw

the canula. The reporter, having in a former report given an account of the various forms of tracheal stenosis upon a pathological-anatomical basis, desires to deal at present with those changes which are directly caused by tracheotomy and the canula. In spite of properly directed incisions and suitably fitting canulæ, granulations form in the upper and lower angles of the wound and, later on, form an obstacle to the removal of the canula. Important changes in the tracheal cartilage and walls may be the result of too large or too small incisions, or deviations from the median line; or, aside from these causes, may be the result of unsuitable canulæ. The reporter has studied these relations in preparations of the larynx and trachea taken from children upon which the operation has been performed, and has found that, to a greater or less extent, the cartilage becomes necrotic or assumes a false attitude. When the necrosed cartilage is removed, the defect heals by granulation and, later, by cicatricial tissue. Stenosis of the trachea is relatively more frequent outside of the hospitals, where the operation has often to be performed in the midst of trying surroundings. In these instances particularly he advises a careful control during the first few days of the anatomical relations as a prophylaxis against the production of stenosis.—*Cent. f. Klin. Med.*, 1889, No. 34.

THE USE OF PESSARIES.—DR. J. B. W. NOWLIN, of Nashville, Tenn. (*Southern Practitioner*), sums up his objections to the use of pessaries in the following terms:

1. They can only act as palliatives. If too small they are expelled or cannot sustain the womb, and if too large they exert injurious pressure.
2. They keep up a continual irritation in the vagina, acting as a foreign substance, producing mucous, purulent and leucorrhœal discharges, thus laying the foundation for fungus or cancerous diseases.
3. Many forms of these instruments are liable to produce septic results.
4. They produce undue and permanent dilatation of the vaginal walls by destroying the tonicities of the parts.
5. If not frequently removed, they become filthy and irritating.
6. They are liable to cause irritation of the bladder and constipation.
7. Their application is often left to the laity.
8. By the obstruction which they offer to the circulation, they produce engorgement, and it may be ulceration of the surrounding parts, extending even to the production of a vesico-vaginal or rectal fistula.

GONORRHOËAL ARTHRITIS.—DR. A. MYRTLE, of Harrogate, Eng., reports two cases of this

character. In both there were the ordinary symptoms of rheumatic arthritis of very severe degree, and in addition to this a remarkable wasting of the muscles of the thighs and legs, which was both sudden and persistent, confirming the views of some authorities that certain centers of the cord and brain are partially paralyzed by the reflex sympathy existing between them and the inflamed urethra; the wasting of the muscles in the limb not affected with the special joint mischief is decidedly in favor of that opinion. In the two cases reported, the treatment was eminently satisfactory and was as follows: Cotton, wool and flannel applied to the joints; two 12-ounce tumblers of old sulphur water an hour before breakfast as an aperient, and an 8-ounce glass of the mild sulphur water at mid-day. Later passive motion and slight massage. Hot sulphur douche at the baths followed by rubbing with camphorated oil.—*Brit. Med. Journal*, Aug. 3, 1889.

OVARIOTOMY IN RUPTURE OF A MULTICULAR CYST.—M. POLAILLON reports (*La Semaine Méd.*) the case of a woman in whom a diagnosis of ovarian cyst had been made and who, while raising herself in bed after taking a purgative, experienced a crackling sensation in the abdomen accompanied by severe pain. During the three following days symptoms of peritonitis appeared, with tympanites, vomiting and severe pain. On the third day laparotomy was performed and a multilocular cyst weighing 3 kilogr. removed. At the upper portion of the tumor one of the pockets, which contained a blackish-looking fluid, was found ruptured. There were well-marked appearances of peritonitis. Fibrinous membranes were removed and the toilette of the peritoneum made with a warm antiseptic solution. The patient rallied well from the operation and bids fair to make a good recovery. M. Polaillon remarks that in rupture of cysts the effusion, if serous, may be reabsorbed; if gelatinous it is not reabsorbed and the patient is exposed to the dangers of peritonitis; in rupture of a myxosarcomatous cyst he has seen a veritable graft of pathological tissue upon the peritoneum.

ANTIPYRIN.—Antipyrin bids fair to become an universal panacea. DR. W. F. WRIGHT, of New York, says that he has employed it in migraine, trigeminal neuralgia, ovarian neuralgia, muscular rheumatism, hysteria, and certain spasmodic conditions, in all of which he has found it of distinctive value. He has also obtained excellent effects from its employment in the insomnia of exhausting and irritating diseases, especially in combination with chloral. By French authors it has been described as possessing valuable hæmostatic properties; thus, Hénocque considers that the drug produces a con-

striction of the vessels and the tissues, while coagulating the blood. In epistaxis he uses it in powder, solution, gauze and ointment. Hinkel (*N. Y. Med. Journal*, Oct. 30, 1888) has used a 4 per cent. solution with good effect in cases of hæmorrhage following operations on the nose. He also finds that it exerts a sedative action in cases of sneezing, coryza, etc., while combined with cocaine it increases the topical action of the latter, enabling it to be used with effect in weaker solutions. Carl Lowe (*Ther. Monatshefte*, 1889, 169) has used antipyrin in many cases of whooping-cough occurring in an epidemic, and found it a very valuable agent except in a few cases, in two of which the symptoms seemed to be aggravated by its administration, and in one of which the toxic effects of the drug were manifested.

The *Berliner Klin. Wochenschrift* (No. 17, 1889) reports marked success following its introduction in the treatment of whooping-cough, but also takes occasion to point out the dangers of poisoning from its administration, a cumulative action having been observed in some cases.

SUPRAPUBIC CYSTOTOMY.—MR. H. T. HERRING reports thirty-one cases of this character performed by Sir Henry Thompson, who at the end of 1888 had completed a series of more than 1,000 cases in which he had operated upon the bladder for calculus and for tumors. Of the thirty-one cases of suprapubic cystotomy two were performed by the old method and the remainder by the modification suggested by Garson and first introduced into England by Thompson. The chief points of this modified method were to commence with a fully yet prudently distended rectum, followed by a fair distension of the bladder; a sparing use of the knife; the opening of the bladder by a small incision sufficient to admit the finger, but enabling further enlargement to be made by dilatation only, since after this the opening contracts and stitching is not necessary, and moreover appears to be generally not advisable.

In the first series (two cases by old method) both patients died. In the second series there were eleven cases of tumor of the bladder and eighteen cases of calculus. Of the eleven cases of tumor only one was fatal, and that from pyæmia. Among the eighteen calculus cases there were three deaths, exclusive of one in which death was due to an attack of bronchitis and asthma. The whole of these cases represent the most advanced and the most complicated examples of disease, and were on that account not amenable to lithotrity, or to a perineal section of any kind.

TYPHLITIS CAUSED BY A DATE STONE.—DR. E. G. ARCHER reports a case of a farmer, aged 35, who, when first seen on June 26th, was suffer-

ing from symptoms of intestinal obstruction. For some time he had experienced constant uneasiness in the bowels, for which he had taken aperients, resulting the day before in copious evacuations. The treatment consisted in opiates and hot applications, followed by castor oil. On June 28th a large accumulation of fæces was passed, giving great relief to all the symptoms. In this discharge a date stone was found. Improvement was only transitory and an abscess formed, bursting into the bowel on July 5th, after which the patient made a rapid recovery. The patient had not eaten dates since the preceding Christmas, and accordingly the date stone must have been in the bowels for at least six months.—*Brit. Med. Journal*, Aug. 3, 1889.

SPONTANEOUS VERSION.—DR. T. W. EVANS, of Richmondale, Ohio, reports a case with the following notable particulars: The patient was first seen June 16th, at 2 A.M. Up to this time she had felt no pains, although there had been copious discharges of liquor amnii on the previous day. Upon examination a hand was found protruding from the vagina in a dorso-posterior position. The arm was easily replaced, after which the head came down. Two hours later the patient was again visited. At this time she was having strong expulsive pains, and an examination revealed a breech presentation. Labor terminated favorably.—*Medical and Surgical Reporter*.

SNAKE BITES.—DR. L. G. LINCUM, of Lampasas, Tex., reports (*Southern Practitioner*, Sept., 1889) that he has treated more than one hundred cases of bites inflicted by poisonous reptiles, and that he has never seen a case result fatally that was treated by the hypodermic administration of permanganate of potassium and the administration of chloroform locally and by means of inhalation. He gives the permanganate in one and two grain doses.

FLOATING KIDNEY.—DR. J. T. B. BERRY reports a case of floating kidney in a woman otherwise healthy. Six weeks after the discovery the patient was attacked by peritonitis, to which she suddenly succumbed. Dr. B. presumes that the peritonitis was set up by the escape of some fluid into the peritoneum, possibly from an abscess of the kidney, or from rupture of the ureter.—*N. O. Med. and Surg. Journal*.

SALVE FOR INFANTILE ECZEMA.—DELAPERT gives the following in the *Revue de Thér. Méd.-chirurg.* of Sept. 1:

R. Boric acid	5 jss.
Vaseline	5 j.
Balsam of Peru	grs. viij. m.

Sig.—Apply the ointment frequently to all the affected parts.—*Medical News*, Sept. 21, 1889.

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PROFESSIONAL ORGANIZATION.

Recently we have been favored with several announcements of new Tri-State and District Medical Societies, every one of which may be regarded as a finger-board, pointing to a restless, working element that permeates the entire medical profession. The omen is for good and indicates a craving desire for a more thorough professional organization than now exists.

The first of these district organizations to arrive at distinction is the Mississippi Valley Medical Association, that has recently held its fifteenth annual session at Evansville, Ind. The type and character of the papers and discussions of that meeting compare favorably with those of any similar organizations of which we have knowledge, while we have reason to believe that the work to be done by the other and more recently organized societies will be valuable, a credit to their distinct organization and to our guild.

One of the notable outcroppings of the meeting at Evansville was the expressed desire on the part of nearly all of the members, that the American Medical Association would officially recognize the Mississippi Valley Medical Association, and all similarly organized district and tri-State societies, as actual branches of that body. The importance of such a movement can scarcely be overestimated, as it practically proposes a feasible plan for a unification of the entire medical profession of this country.

It is easily understood that, on account of the long distances that separate the great medical centres where the annual meetings of the Amer-

ican Medical Association are held, there is a constant fluctuation and practical change of active membership. Moreover, the American Medical Association being in its organization a body composed of delegates from affiliated State, county, and other local societies, the same persons are not every year sent as delegates, all of which conduces to a constant disintegrating process, that is actively detrimental to the strength and efficiency of this parent organization of American physicians.

Through the organization of district and tri-State societies that are geographically limited in area, which invite the presence and active coöperation of every member of the regular medical profession within their bounds, it would be possible to obtain not only a professed, but an actual allegiance of more than forty thousand active members. Even this number is only about one-half of those who claim to practice regular medicine.

In this more complete organization a certificate of membership issued by any branch, should receive and have the same recognition as if it were issued by the parent organization.

One of the grand purposes of this thorough organization of branch associations, would be the ability to practically institute a system of collective investigations of disease, and of any department of the sciences, which would in their results be of inestimable value. In fact, the treasury would warrant the inauguration of a system of original scientific research that would not only be a stimulant to every thinking worker in our domain, but a source of pride to every American physician. It would be impossible to comprehend the amount of good that may be accomplished in this direction.

The members of the American Medical Association, some six years ago, believed it to be in the interest of the entire profession that it should have a journal that would not only be the official organ of the Association, but that it would in time become the principal avenue of intercommunication in the entire medical profession, and thus become a practical bond of union. It now assumes its functions in a direct effort to guide the profession in a way that looks to a thorough harmony and complete unification of the entire body of American physicians. The spontaneous growth, and enthusiastic support of the geographical district

medical associations indicates a plan by which a methodical unification may be accomplished. It is desirable that this official channel of intercommunication in the profession shall be placed in the hands of every physician. This may be brought about through the annual payment of dues in the branch associations, in precisely the same manner as adopted in the American Medical Association, so that every member would in this manner obtain the Association journal. A by-law providing that any member who has once paid his annual dues of five dollars should on exhibition of a certificate to that effect be exempt from a second payment, and only required to pay a small sum to defray the current expenses of the additional meeting, or meetings which he may attend.

In this manner the Association journal would not only be the official organ of the American Medical Association, but would also bear a similar relation to all the branch associations, and thus may it be made a veritable mirror, to reflect the very best thoughts of the very best minds in the entire realm of medicine. We need, we must have a practical and harmonious unification of the entire medical profession of this country.

TREATMENT OF POTT'S PARALYSIS BY EXTENSION.

In the *American Journal of the Medical Sciences*, May, 1889, DR. S. WEIR MITCHELL relates how, becoming dissatisfied with the progress of cases of paralysis from spinal caries under the customary treatment, he had recourse to the device of partial suspension by the head, which he believes to have been first systematically practiced by his father, Prof. J. K. Mitchell, with satisfaction to himself and benefit to his patients. The extension is made by a sling suspended from a curved iron made movable and set by a screw, which can be attached to a chair, thus allowing the patient to sit up and, if necessary, to be taken out of doors in that position. The amount of extension used is gauged by a spring balance, and, beginning with a slight pull and regulating the amount of force used by the patient's sensations, may be increased, in some cases, to as much as seventy pounds, and used from four to six hours in the day. By this means he has been able to rectify curvatures and to restore motion, sensi-

bility and nutrition in cases which had been unsuccessfully treated by rest in bed, the plaster jacket and the usual topical and constitutional treatment. He concludes as follows:

"My conclusions are that suspension should be used early in Pott's disease.

"That, used with care, it enables us slowly to lessen the curve.

"That in these cases there must be, in some form, a replacement of the crumbled tissues.

"That unless there is a great loss of power, the use of the spine car or chair, etc., of John K. Mitchell enables suspension, especially in children, to be combined with some exercise.

"That no case of Pott's paralysis ought to be considered desperate without its trial.

"That suspension has succeeded after failures of other accepted methods.

"That the pull probably acts more or less directly on the cord itself, and that the gain is not explicable merely by obvious effects on the angular bony curve.

"That the now well-known influence of extension in Pott's palsy makes it probable that in other forms of spinal disease not due to caries, extension in various forms may be of use, as has apparently of late been made clear.

"That the methods of extension to be used in these and in various cases may be very various, only provided we get active extension.

"That the plan and the length of time of extension must be made to conform to the needs, endurance and sensation of the individual case."

EDITORIAL NOTES.

HOME.

THE OHIO STATE DENTAL SOCIETY will hold its fifth annual meeting at Cleveland, on October 30, 1889.

CANADIAN MEDICAL ASSOCIATION.—*The Canadian Practitioner*, in an editorial on the recent Annual Meeting of the Canadian Medical Association in referring to the representatives from the United States, says:

"Our brethren across the imaginary line are ever welcome at the meetings of our societies. The United States certainly sent a very able contingent to Banff. Never has the Canadian Medical Association had more distinguished visitors. Among them were Drs. Curry and Whittaker, of

Cincinnati; Drs. Gibney and Bulkley, of New York; Dr. Barker, of Philadelphia; Dr. Marcy, of Boston; Dr. Hannau, of Albany, and others. They took an active interest in the proceedings of the meeting and engaged freely in the discussions when called on. We were glad to meet them, sorry to part from them, and we hope they will visit us again next year in Toronto. In the meantime we have been asked to visit them. Let us do so."

DOMINION MEDICAL ASSOCIATION.—Officers elected for following year:

President, Dr. James Ross, Toronto.

Vice-Presidents, for Ontario, Dr. Bruce Smith, Seaforth; for Quebec, Dr. Lachapelle, Montreal; for Nova Scotia, Dr. Johnston, Sydney Mines; for New Brunswick, Dr. Holden, St. Johns; for Prince Edward Island, Dr. McLeod, Charlottetown; for Manitoba, Dr. Spencer, Brandon; for Northwest Territories, Dr. Brett, Banff; for British Columbia, Dr. Edwards, Nanaimo.

General Secretary, Dr. James Bell, Montreal.

Treasurer, Dr. W. H. B. Aikens, Toronto.

Local Secretaries, for Ontario, Dr. Farley, Belleville; for Quebec, Dr. Elder, Huntingdon; for Nova Scotia, Dr. Muir, Truro; for New Brunswick, Dr. Raymond, Sussex; for Prince Edward Island, Dr. Warburton, Charlottetown; for Northwest Territories, Dr. Higginson, Winnipeg; for British Columbia, Dr. Rutledge, Moosomin.

THE AMERICAN RHINOLOGICAL ASSOCIATION meets at the Palmer House, Chicago, on October 9, 10 and 11, 1889.

THE SANITARY CONDITION OF LOS ANGELES.—We regret to learn that a proposition to issue bonds for the construction of a sewer to the sea has been defeated by a popular vote of the citizens. The necessity for the successful carrying out of some plan to relieve this fair city from the noisome and sickening odors arising from the so-called sewers now in existence, may be judged from a paragraph which recently appeared in a local paper:

"Los Angeles is a city of from 70,000 to 80,000 people. It is almost without sewers. More than three-fourths of it has no sewerage at all. The small sewers we have are choked and overflowing, and foul matter is often forced out of them. Sewer gas from leaks and overflowing sewers

floats in the business centers at night, and in the residence portions the air is heavy with foul odors and gases from neighboring cess-pools. The soil of the city is in general such that it does not absorb the foul matter, and that renders the situation worse. In many parts of the city the odor at nights from cess-pools is so strong that residents are obliged to close their windows. Children are dying with diphtheria as a result of these cess-pools."

To longer delay action will be worse than criminal. Money should not count where the health of the people is at stake. We trust that the press of California will so arouse public opinion that this blot on the escutcheon of the gem of the Pacific coast may be removed, and Los Angeles once more regain its reputation as a health resort.

THE AMERICAN RAILWAY SURGEONS will hold their next annual meeting at Kansas City, Mo., in May, 1890.

TYPHOID FEVER is epidemic at Negaunee, Mich. Over 100 cases are reported.

FOREIGN.

THE CONTINENTAL ANGLO-AMERICAN MEDICAL SOCIETY.—The first general meeting of this society will take place at the Grand Hotel, Paris, on Monday at 5 P.M., and the first annual dinner will also take place at the Grand Hotel at 8 P.M. on the same evening. The following gentlemen are Honorary Presidents of the Society: Sir Spencer Wells, Sir Joseph Lister, Dr. Richard Quain, Prof. Ball, Prof. Brown-Séquard, Dr. Ricord, Dr. J. S. Billings, Dr. Fordyce Barker, and Dr. Weir Mitchell. The Executive Committee includes the Hon. Alan Herbert, M.D., Dr. Faure Miller, Dr. Chapman, Dr. Dupuy, Dr. Barnard, with Dr. T. Liun (16 Rue de la Paix) as Secretary.

CHILD MORTALITY IN DUBLIN.—An extremely interesting and suggestive paper, by Dr. Grimshaw, Registrar-General for Ireland, entitled "Child Mortality in Dublin," may be found in the July number of the *Dublin Journal of Medical Science*. The paper deals largely with the relations subsisting between child mortality on the one hand and drunkenness and crime on the other, and is based upon a careful tabulation of the vast amount of statistics at the command of the author. Among other matters of interest, Dr.

Grimshaw establishes the fact that the mortality of children in Ireland as a whole, is lower than in England and Scotland, because the relative proportion of the urban population in those countries far exceeds that of Ireland, while the death-rate of town children far exceeds that of country children; that notwithstanding the foregoing, the child mortality of Dublin is comparatively high, both in relation to that of the cities of England and Scotland and that of the other large Irish cities; and that the extremely intemperate habits of the lower classes in Dublin have much to do with this high death-rate. The children of drunken parents, says Dr. Grimshaw, are not born healthy, and when born are neglected in every conceivable way and are exposed to dangers from reckless negligence which are almost inconceivable. A comparison between the rates of mortality and the rates of drunkenness, as measured by the criminal statistics of large towns, shows that there is a close relationship between the two, the carelessness with respect to child life being shown by the large proportion of children who die without being medically attended during their last illness.

NEW PAMPHLETS ON HYPNOTISM.—The recent appearance of two pamphlets in the German language on the subject of hypnotism is an indication that the interest taken in this subject is by no means confined to the French physicians. The first of these, by E. Baierlacher, Stuttgart, is entitled "The Therapy of Suggestion, With its Technique." The second, by F. Müller, treats of "Hypnotism and Suggestion, as Well as Their Therapeutical Application."

MR. CLARK BELL, of the Medico-Legal Society of New York, was recently tendered a reception by the President and Council of the Society for the Study of Inebriety, of London. A resolution was also adopted congratulating Mr. Bell on his services to legal medicine; on the effect of the discussions at the Medico-Legal Society of New York on criminal procedure in cases in which persons sentenced to death have been ultimately respited on the plea of insanity; on his efforts to abolish physical restraint in the treatment of insanity in the United States; and on his pleas for a reconsideration of criminal procedure in the case of inebriate criminals, who were often really irresponsible and subjects of a true disease calling for medical and not penal treatment. Mr. Bell,

in reply, spoke of the excellent state of English asylums for the insane, and dwelt strongly on the urgent need for a more humane and intelligent interpretation of the law as to inebriate responsibility.—*Brit. Med. Journal.*

COLOR BLINDNESS AND DEFECTIVE VISION.—At the last annual meeting of the British Medical Association Mr. BICKERTON, of Liverpool, directed the attention of the ophthalmological section to the prevalence of color blindness in the merchant marine, and the insufficiency of the tests now employed for its detection. He proved by the inexorable logic of facts that not only has this particular variety of impaired vision been productive of serious mischief, but that defective "far sight" in officers and look-outs must clearly be held responsible for numerous disasters at sea. The time seems to be now ripe for parliamentary action, and Dr. Farquharson will ask the President of the Board of Trade whether it is the case that a departmental committee has been appointed to consider the whole subject, and whether their report will be presented to the House before the end of the present session.—*Brit. Med. Journal.*

REPORTS OF EPIDEMICS.—The French Minister of the Interior, with a view to receiving regular reports upon the sanitary condition of all parts of the country, and to be able to arrest, as promptly as possible, the spread of epidemics, has requested the Minister of Public Instruction to call a meeting of the principals of schools, in order to establish a new plan of statistics. This will consist in a bulletin setting forth the appearance of epidemic diseases in the schools, which shall immediately be forwarded to the sub-prefect under cover of the Mayor of the commune. A quarterly report of the epidemic affections which have made their appearance during the preceding three months is also to be made. These statistics will be revised in the offices of the sub-prefects and transmitted, through the various departments, to the Minister of the Interior under stamp of the department of "*Assistance et de l'hygiène publiques.*"—*Le Bulletin Médical.*

A STATUE has been erected in Courtrai, Belgium, to Palfyn, the celebrated anatomist of the eighteenth century and Professor of the University of Gand.

TOPICS OF THE WEEK.

THE MEDICAL STUDENT OF THE FUTURE.

An editorial in the *British Medical Journal* of Sept 7th makes special reference to the student of the future. From it we make the following abstract :

We may assume without the least offense that most men enter on the study of medicine as the means of obtaining an honorable living ; it is not necessary to pretend to any higher motives, like that which should influence a student of divinity. Yet there is room, we maintain, for the influence of the very highest motives in the choice of the healing art as one's calling in life ; and the influence is likely to have an actually greater scope, and the end is often even more likely to be achieved, when it is concealed by the friendly covering of the less exalted motive.

There are hundreds of medical men in our land to-day who lead lives of the loftiest enthusiasm, working for the good of their fellow-men, and blessing all within the scope of their influence, pretending with a beautiful humility that they are only following their common business, while they are actually ministering angels. A doctor may live and work for fees and be respected just as any other servant of the commonwealth ; he may also live and work for humanity and the love of his neighbor as though he were ordained for the proper work of the ministry. Grand and beautiful as was the work of Father Damien amongst the lepers of Molokai, there is no reason why a medical man should not have done as much, or even more. "Nothing great," says Emerson, "was ever achieved without enthusiasm," and we know it to be so, whatever the hard, cold world may say, which, in truth, does not greatly care for anything which it cannot quite understand.

What is wanted is a noble ideal ; given this, it may be exercised as freely in our profession as anywhere in this world of ours. What a man seeks at his medical school this October, that shall he find. Honors, they await him ; emoluments, they shall come ; happiness, the great enduring pleasure that comes from a sense of duty bravely done, this too shall he his, at the price—at a fixed price and no abatement ; to this let him make up his mind as quickly as may be. Let him examine himself and know what it is he wants ; he can certainly obtain it. Let the lower motive content him ; he will not be disappointed. Medicine is rich enough to pay him for his pains ; he shall have his house, his servants, and his gig ; shall be justice of the peace, mayor of his town, and be held in honor of men. A man, by indomitable energy and perseverance, may get all he wants. As Hazlitt somewhere says, he could always gain admittance to see any famous picture in any great man's home, notwithstanding the darkest frowns of the servants ; and he adds that he could, by similar means, have obtained any post under Government which he might have set his whole mind upon.

The thing, therefore, to be sure of at the outset in devoting one's self to medicine is the end proposed ; if self, then not happiness of the highest sort also ; if peace of

mind and the purest sort of happiness be the end in view, then to live and work for others, for the advancement of the profession in its widest and grandest aspects, is the only certain way to obtain them. Old Thomas Vicary, chief surgeon to St. Bartholomew's Hospital, 1548-62, says in his curious *Anatomie of the Bodie of Man*, that the doctor must be learned, must know his principles, be seen in natural philosophy, in grammar, must speak congruity in logic, speak seemly and eloquently, know things natural and non-natural, and, above all, be good-looking, for whose face is not seemly, it is impossible for him to have good manners.

All this implies much more than is demanded for the mere cramming up for professional examinations. Be liberal in your treatment of the most liberal of all professions, and give at least as much as you take. How few men ever think of paying the least fraction of their indebtedness to science ! They consider this all arranged for in their hospital ticket. Such men

Know, not for knowing's sake ;

Know, for the gain it gets, the praise it brings,

The wonder it inspires, the love it breeds.

No man striving only for his own happiness can ever attain it, because he is in the midst of forces contending against him, set in motion by every other man of the same determination. Count Tolstoi has admirably explained why this struggle for individual happiness must necessarily fail of its purpose ; and Mr. Browning, in his magnificent poem of "Paracelsus"—which should be known by heart by every medical student of the thoughtful sort—has pointed out how mere knowledge for a selfish end can never bring happiness, whatever else it may achieve ; but that love, allied to knowledge, can transform the soul to God-like beauty. We may long, like Paracelsus in the poem,

To wring from Heaven some wondrous good for man :

but it may not be given to many of us to do great things. Of every medical man, however, Society—having in view his great endowments, his privileges, his public estimation, and the dignity of his calling—has the right to expect maintenance of the fabric, if not its adornment ; and, as he is necessarily looked up to as a "doctor," that he shall be a real teacher how to live the highest mental as well as the healthiest bodily life. As Sir J. Crichton Browne pointed out recently, this can best be done by imbuing our own minds with the prolific and ennobling thoughts of the wisest writers of the past and present ; for to teach we must learn. Some will say we ask too much of the overtaxed medical student. Not so. The mental enlargement we demand can be had as relaxation between the intervals of necessary studies. One hour a day with the great poets and prose writers will enable the student to do better work in the medical school ; he will not lose his time by this form of dissipation ; and when he goes into the great world which lies outside his hospital he may find his own medicine and that of his patients in the balm for troubled spirits which the philosophers and poets of all time stand by to minister. We say he will not lose his time by this expansion of his education ; it will serve to digest his technical knowledge, to combine and blend his studies into a truer

and sounder learning than can be tested by examination papers or rewarded by degrees.

Let no student, therefore, think that so much anatomy, physiology, medicine and surgery, signed up and certified for at school and college, suffices to make the medical man of to-day. In one of the most suggestive of the inaugural addresses delivered in London last October, that by Dr. William Ewart at St. George's Hospital, this point was strongly emphasized. We cannot refrain from recalling a sentence or two. "Among the youths," says Dr. Ewart, "who elect to follow this calling, many do so in ignorance of what the choice implies. Of no other profession is it more true that an easy entrance examination is unkind. Ours, nowadays more than ever, is an exacting profession. Although neither genius, nor brilliancy, nor even talent are wanted, she claims energy, physical and mental, capacity for sustained efforts, earnestness, and a high moral tone."

A medical practitioner whose whole life is not that of a persevering student has no business in the profession. A man who knows nothing but what his curriculum enforces, and who makes haste to forget that as soon as it has obtained him his license to practice, can only bring discredit on the high-minded and cultivated men who spent their lives in making smooth the path he has unworthily trodden. If medicine is to hold its high position and retain the respect in which it is justly held, the men who are coming forward for its emoluments and distinctions must be equipped with all the richer learning which is required to enable them to hold their own in a world which is daily becoming more highly cultured, and which will certainly demand more of its medical advisers. A mental outlook bounded by six-ounce bottles and an intellect from which there is gradually fading the scanty lore gathered at the medical school with much pain and but partial comprehension far too generally characterise the middle-aged general practitioner of to-day. He of to-morrow will need to know more, and to know it in quite another way.

CREOLIN IN OBSTETRICS AND GYNECOLOGY.

DR. THEOPHILUS PARVIN has been employing creolin very extensively of late. He finds it valuable in cervical catarrh, in which he applies it at intervals of three days. In the strength of one teaspoonful to a pint of water it is used wherever a vaginal injection is indicated. Benzoated lard with the addition of 4 per cent. of creolin makes a reliable antiseptic ointment, useful alike to the obstetrician and gynecologist. Parvin makes use of this in tamponing the vagina in cases of descent or posterior displacement of the uterus. For this purpose a long strip of absorbent cotton smeared with the ointment is tucked alternately into the anterior and posterior cul de sac until the vagina is packed either partially or completely as the case requires. Such a tampon has been left *in situ* by Dr. Parvin as long as six days, at the end of which time the only odor detected was that of creolin. In obstetrical practice creolin possesses the advantage of revealing itself both by sight and smell, thus obviating

the dangers which accompany the use of sublimate and carbolic acid, which are often used in too strong solutions. Mixed with water in the proportion of one teaspoonful to the pint, creolin makes a milk-colored fluid. —*Practice.*

THE USE OF ANTISEPTICS BY COUNTRY SURGEONS.

The surgeon of the city, with all his expensive appliances and machinery and skilled assistance, may find the aseptic method of treating wounds practicable; but the country practitioner who must forego those aids, and who finds his patient oftentimes in anything but aseptic surroundings, must resort to other and simpler methods.

All my surgical instruments and dressings are carried in one small hand-bag. I have carbolic acid, tablets of corrosive sublimate and iodoform. Needles, knife-blades and other small instruments are kept in a 1-60 carbolic-glycerin solution. After using and cleansing, they are put back into this solution, and thus are always ready for immediate use. Other large instruments are put into a 1-40 carbolic solution some time before needing them. My bag contains silk on a reel, and drainage-tubing, both in a 1-4,000 solution of corrosive sublimate. Sterilized sponges are carried in a 1-1,000 corrosive sublimate solution, and suitable pieces of oiled silk are put in the same, some time before using.

After the flesh adjacent to the wound has been thoroughly washed, both skin and raw surface are bathed in a corrosive sublimate solution, the strength varying between 1-1,000 and 1-5,000, in inverse proportion to the extent of the raw surface. After the incisions are completed, the cut surfaces are washed for a considerable length of time in a 1-4,000 corrosive sublimate solution, hot enough to check bleeding, to blanch tissue, and to render the parts thoroughly aseptic.

For ligature I use silk, and cut the ends short. If the wound is a large one and necessitates the use of a drainage tube, I do not think that it makes much difference whether or no the ligatures are cut short. But if the wound be small, if there be no drainage tube, or if it be early removed, I consider that the long ends of the ligatures prevent absolute healing in a short space of time. These short silk ligatures either become absorbed or encapsuled. They give me no trouble, and I get healing by first intention through the full extent of the wound, which is not closed until every particle of oozing blood has ceased. For healing, I depend largely on the most careful and accurate approximation of the parts.

After the wound is closed, and thoroughly washed with a 1-4,000 corrosive solution, iodoform is used freely, as wounds seem to heal more kindly with it than without it. After this a piece of sterilized oiled silk large enough to cover the wound is applied. This is used for two purposes: to prevent the sticking of the dressings, and to keep the plasters which cannot be rendered aseptic from contact with the wound. Over this are placed several layers of sublimate or carbolic gauze, then a large piece of oiled silk to cover the whole, which is bandaged in the ordinary way. Subsequent dressings I do, if possible, myself, and make them as few and far between as

may be. On redressing, the wound is generally found to be so clean that the usual washing is simply a process of dampening with an antiseptic solution.

Since I began the constant and systematic use of antiseptics, I have seen most cases heal without a drop of pus. In simple amputation I have come to expect healing by first intention except around the drainage tube, and solid healing by from twenty-one to twenty-eight days after operation. As a rule, I greatly prefer the action of corrosive sublimate to that of carbolic acid as an antiseptic. But if I know of the existence of albuminuria, or suspect any latent tendency to disease or congestion of the kidneys, I am very careful to avoid it.

It will be seen that my method is exceedingly simple, so simple that it would hardly be a matter of interest except for the fact that its very simplicity makes it practicable, and this especially adapts it to the unassisted country surgeon. It is now something over two years since I have seen a touch of surgical fever in my own practice, and in uncomplicated surgical cases I have rarely seen a temperature above 100°. I now get healing of large cut surfaces by first intention, as a rule; formerly it was the exception.—DR. ROBT. BURNS, in *Boston Med. and Surg. Jour.—Weekly Medical Review*.

SOCIETY PROCEEDINGS.

New York Academy of Medicine.—Section on Orthopedic Surgery.

Stated Meeting, April 19, 1889.

A. B. JUDSON, M.D., IN THE CHAIR.

PSOAS ABSCESS FOLLOWING POTT'S DISEASE.

DR. V. P. GIBNEY presented a patient, a girl 14 years old, on whom he had operated for double psoas abscess following Pott's disease of nine years' duration. The carious vertebræ were evidently consolidated when last November large abscesses were discovered, and the patient was brought under treatment. On the right side the tumor was incised in Scarpa's space, and long forceps were passed under Poupart's ligament through the iliac fossa, and into the lumbar region, and a counter opening was made on the forceps along the border of the erector spinæ muscle. Pieces of bone escaped with the pus. The cavity was curetted and the bone scraped gently. With antiseptic dressing and injections of carbolic acid solution 1-40, and 1 per cent creolin solution, both wounds closed in a month. The left side was then operated on by simple incision and drainage. Large quantities of bone detritus were scooped out with the finger. A sinus still remains on the left side, from which a piece of bone is occasionally discharged.

The case was exhibited as showing the advantage of Owen's method over attacking simply the sac and not the whole suppurating track.

DR. GIBNEY believed it would have been better to have treated both sides according to Owen's method; but in general he doubted the propriety of doing this operation during exfoliation, which would necessitate a subsequent operation. It is also important that the patient should be in pretty good condition.

DR. R. H. SAYRE had used injections of peroxide of hydrogen in large abscess cavities with better results than from carbolic, or bichloride, or boro-salicylic solutions.

DR. GIBNEY said a similar experience had been reported by Dr. Vance.

DR. JUDSON thought that an objection to operating on these cases was that for the natural incarceration of the pus and detritus, we submitted an artificial opening, necessitating antiseptics to hasten cicatrization. If these accumulations are doing no harm, it is better to leave them for removal by natural processes; and if in due time they perforate the skin, the general and local conditions are ready to promote evacuation and speedy cicatrization.

DR. J. A. WYETH said that operation is indicated when large abscesses are situated on exposed parts of the body, and liable to injury and subsequent septic complications. He recalled the case of a woman who, thirteen years after being considered cured of Pott's disease, slipped and fell, striking a large gluteal abscess. The accident speedily gave rise to symptoms of sepsis with high febrile movements, and several operations under ether were necessary for the removal of bone detritus which was spread through the gluteal muscles. The patient ran great risks, but finally recovered. He had had other similar cases. A psoas abscess behind the peritoneum causing no trouble, should be left alone, but one pointing in the thigh, back, or other exposed situation, should be operated upon, as the danger of the operation is almost nil.

DR. N. M. SHAFFER was reminded of the history of a patient with Pott's disease and an abscess occupying the gluteal region and the anterior part of the thigh. The child fell, striking the gluteal tumor. The immediate symptoms were alarming, but without the adoption of any special treatment, the accident resulted in the entire disappearance of the abscess. If there were any means of determining with certainty when an abscess from Pott's disease contains bony detritus, it would be preferable to operate; but while spondylitis is still active, it is better to postpone operating as long as possible. He recalled a case of Pott's disease and hip joint disease which he had been watching for several years, where spiculæ of bone as large as the end of the finger were expelled in a sudden and violent attack of coughing. The bone was undoubtedly from the cancellous structure of the sixth or seventh cervical vertebra. The patient

was relieved at once, and physical examination showed that very little trouble had been caused by the entrance of the bone through the lung tissue into the bronchial tubes.

KNOCK-KNEE ; CLUB-FOOT ; DEFORMITY FOLLOWING HIP DISEASE.

In a paper on "Osteotomy," DR. WYETH related two cases in which he had corrected in- and out-knee in the same patient by double osteotomies. The patients were $3\frac{1}{2}$ and 4 years old respectively. Both were discharged entirely relieved. Strict antisepsis was followed and the limbs were dressed in plaster of Paris in a position of over-correction. He prefers MacCormac's incision on the outer side and just above the capsule, since the saphena vein and anastomatica magna artery are not endangered as in McEwen's operation on the inner aspect of the thigh. He also briefly related three cases in which patients, aged 13, 18 and 26 years respectively, had been relieved of the deformity following hip disease, and restored to good locomotion by operations on the femur. The method pursued was Gant's osteotomy below the lesser trochanter. The after treatment had been Buck's extension and Hamilton's long splint. In one of the patients there had been double hip disease. Two months after the left femur had been operated on, the right was operated on ; and four months after the date of the first operation the patient was discharged cured, with good locomotion.

He also related two cases in which congenital talipes equino-varus of the most exaggerated type had been corrected with good recovery, and with the feet in excellent shape. Tenotomy of the tendo Achillis, tibialis anticus, and tibialis posticus was first done ; the first two subcutaneously, and the last by open incision, the tendon being dissociated from that of the flexor digitorum, and divided on an aneurism needle. The operation was completed by an osteotomy as follows : An incision was made on the outer side of the dorsum, exactly over the point of greatest convexity ; the tissues were lifted from the tarsus by an elevator, and a conical section including portions of the calcaneus, astragalus, cuboid, and scaphoid was removed. The rule should be to remove all parts which prevent replacement of the foot. The foot being brought into normal position by eversion and rotation, aseptic dressing and plaster of Paris completed the treatment, the result of which was excellent.

DR. GIBNEY said that the anatomical point raised in the paper concerning supra-condyloid osteotomies certainly commends to us the operation of MacCormac. Although in- and out-knee in the same subject is rare, he had seen many instances of multiple deformity among Bohemians and Italians. He had recently done a sextuple osteotomy at one sitting, and is treating an un-

united fracture of the right tibia, all the others having united.

DR. JUDSON thought that in congenital talipes the reduction of the deformity by mechanical or operative means is easy ; but that is a small part of the necessary treatment. So long as the patient is growing he must be under occasional observation, and if necessary made to wear for a few months, at intervals of two or three years, a brace fitted to the present needs, in order to prevent threatened relapses. In the deformities of the knee there is especial reason for preferring mechanical means of correction, because here we have the advantage of the leverage found in the tibia and femur, while in club-foot there is only the tibia on one side, and on the other the short and many-jointed foot.

DR. H. L. TAYLOR said that late observation of the results of treatment is of especial importance in orthopædic practice. If surgeons and orthopædists would report the condition of patients five, ten, or more years after dismissal, a more intelligent choice of methods could be made.

DR. SHAFFER said that his experience with mechanical appliance in the treatment of talipes leads him to think that many severe operations are performed on patients who could be better treated by traction. He recalled a case in which there was confirmed equino-varus, although three or four tenotomies and five or six osteotomies had been performed. He had applied the "external lateral stretcher" and the patient is now walking on the flat of the foot. He referred to the interesting question whether osteotomy is advisable when there is motion in the hip-joint. In a patient, on whom Dr. W. T. Bull had operated, some motion was found after etherization. The reduction of the deformity by osteotomy had been followed by persistent traction with the hip-splint ; and good position and slight motion had both been retained.

DR. GIBNEY believed that the presence of motion is not a contra-indication to the operation. About six months ago he had performed Gant's operation for a right-angled deformity. The flexion had been reduced from 90° to 15° , and the limb was retained at 15° of flexion by a traction apparatus for three or four months, when it was removed and the patient allowed to walk about with a high shoe. After about six weeks the flexion had increased to 25° or 30° . Traction was re-applied, and the limb is being again brought down. He recognized the necessity of protective apparatus in order to retain or increase the result secured by operation.

DR. WYETH had operated in several cases where there was motion and had refused to do it in others. In a patient whom he had seen with Dr. L. A. Sayre, there was considerable motion, and he had done a tenotomy for temporary relief, postponing osteotomy.

DR. R. H. SAYRE said that in the case referred to, improvement had followed the tenotomy, but an apparatus is necessary to prevent a return of deformity. He thought that in some cases sufficient reduction of the flexion might be brought about by section of the psoas and iliacus muscles. This had been done in one case in which, although the operation had been subcutaneous, injury of the vessels had been avoided. By open section this danger would be avoided.

DR. J. D. WILSON expressed surprise at the frequent mention of elevations of temperature in the history of Dr. Wyeth's cases, which had been treated antiseptically. Have our teachings been too absolute, or do such temperatures really indicate imperfect antiseptics?

DR. WYETH replied that the "temperature of reaction," occasionally as high as 102° , occurred in the first twenty-four hours, but it usually fell to normal in forty-eight hours. Traumatism, ether, shock, and the use of sublimate combine to produce this reaction, which might still be called an aseptic temperature. He closes the discussion by saying that the simplicity and safety of osteotomy had been shown by the cases he had reported. While no case of equino-varus treated the first two years of life should require tarsotomy, neglected cases will present themselves where nothing but tarsotomy will give relief. The operation may give considerable foreshortening to the foot, but one can certainly correct the deformity, however great, by removing enough bone; and if this be properly done, he believed it to be real conservatism.

Association of American Physicians.

Fourth Annual Meeting, held in the Army Medical Museum and Library, Washington, D. C., September 18, 19 and 20, 1889.

WEDNESDAY—MORNING SESSION.

The Association was called to order at 10 A.M. by the PRESIDENT, DR. FRANCIS MINOT, of Boston.

The first business was the reading of the President's Address:

THE PROGRESS OF MEDICINE DURING THE LAST FIFTY YEARS.

The immediate causes of the great advancement of medicine were the growth of physiology and pathology, including bacteriology, and the improvements in clinical and laboratory teaching of the present day, which have led to a better acquaintance with the nature and causes of disease, to a more rational and successful therapeutics, and to the prevention by means of hygiene of a large number of diseases, including some of the

most fatal. These means have been greatly aided by the progress of science in general and by the conveniences of modern civilization, which enable observers from different countries to assemble together for interchange of knowledge and experience. A large share of medical progress is also due to the dissemination of knowledge by means of well conducted journals which enable thousands of practitioners who cannot leave their homes to be constantly supplied with the most recent discoveries relating to pathology and the diagnosis and treatment of disease. The organization of this Association is peculiarly adapted for the progress of medical science, representing no one section of our country, but including practitioners from all parts of the United States and Canada, whose experience, knowledge, observation and ability are brought together for comparison and for mutual instruction.

The President reported the death of the following members: Drs. H. D. Schmidt, New Orleans; John C. Dalton, New York (honorary member); Robert Palmer Howard, Montreal; and Edward T. Bruen, Philadelphia.

DR. C. F. FOLSOM, of Boston, read a paper entitled

THE EARLY STAGE OF GENERAL PARALYSIS.

The author first reported a number of cases illustrating the early stage of the disease in which the motor disturbances were very slight and might readily be overlooked and escaped detection. The striking loss of muscular control or power, generally considered a part of the disease, were not found until a late period of the disease. The mental symptoms consist in impairment of a peculiar quality, often so slight as to be made out with difficulty.

The disease arises most commonly under prolonged strain, particularly when associated with unaccustomed excesses. At least two-thirds of the general paralytics have had syphilis. The relation of the disease with syphilis is too frequent to be accidental. The disease is, however, not a stage of syphilis, and is not benefited by specific treatment. The prognosis is probably not so hopeless as it is generally considered to be.

The common early treatment is harmful. Foreign travel is injurious. The only hope of at least partial cure or marked amelioration is in entire mental and physical rest.

DR. ROBERT T. EDES, of Washington, reported the case of a man suffering from pronounced general paralysis, in whom the first symptoms of the disease made their appearance some twenty years ago. If the anatomical view of general paralysis is accepted he did not consider it strange that mental symptoms might precede the motor, depending upon the seat of the lesions.

DR. S. WEIR MITCHELL, of Philadelphia, was sure that certain cases of general paralysis began

most markedly with motor trouble, while others began most decisively with mental conditions. In regard to syphilis he agreed with the author, except that he had seen cases due to syphilitic disease in which cure had followed specific treatment. He had also seen cure follow in a small number of cases where the treatment was begun in the early stages, but where the motor disturbances and the mental incapacity were sufficiently marked to render the diagnosis reasonably certain. In all of these cases there had been a total abandonment of all previous pursuits with absolute mental and physical rest. He agreed with the author that foreign travel was often injurious.

DR. JAMES J. PUTNAM, of Boston, remarked that the fact that syphilis acts in this disease not by producing a direct lesion, but in an indirect manner, justifies us in looking for other causes of degeneration which might act in a similar manner. He asked if the reader had seen any cases in which chronic lead poisoning was the apparent cause of the general paralysis, and related a case in which the imperfect and slow speech, the imperfect handwriting and the expression of apathy and indifference suggested a diagnosis of general paralysis. In this case there was, however, a history of drinking of water contaminated with lead, and there were certain local symptoms indicating lead poisoning.

DR. WM. PEPPER, of Philadelphia, believed that he saw these cases from a different standpoint than that of Dr. Folsom. They came to him as cases of dyspepsia, lithæmic disturbance and the like, and are under his care for some time before symptoms leading to recognition are developed, sometimes for years before the parietic symptoms appear. He could not regard syphilis as in any way essential in the causation of general paralysis.

In regard to the early stage of the disease, there was not one symptom mentioned by Dr. Folsom or described by others as indicating the early stage, which he did not often find in cases of nervous lithæmia. There may be a grouping of these symptoms or a discovery on the part of the diagnostician which will enable a finer and finer shade of these differences to be recognized, which does constitute a basis of diagnosis. He thought that general paralysis could be initiated by many disturbing, depressing or irritating causes, and that in its early stages and slight degrees it was capable not rarely of being entirely cured. If these cases are permitted to go on with neglect of hygienic habits and with excesses, sexual, alcoholic or business, a notable proportion will end with symptoms of general paralysis.

DR. C. F. FOLSOM, of Boston, said in regard to lead that while he had seen cases in which this agent had produced symptoms similar to the initial symptoms of general paralysis, he had not seen a case in which the terminal symptoms of general paralysis had been produced. As illus-

trating apparent cures after specific treatment he referred to a case in which the use of large doses of iodide of potassium apparently produced complete recovery, and the patient returned to his previous business. The symptoms after several months reappeared and had continued to steadily progress. Whether this is the result in all such cases, he was unable to say.

DR. JAMES STEWART read a paper on

TETANY.

The details of the following case were referred to:

The patient, a male, aged 40, has been troubled during the past eight years with regularly recurring attacks of tetany. He served as a soldier during the American civil war. Suffered at that time and subsequently from chronic dysentery and malarial attacks. For upwards of ten years he has been troubled with diarrhœa. Patient is tall, emaciated and anæmic. The first subjective symptom of his tetany is usually double vision, which is quickly followed by the characteristic contractions of the flexor muscles of the hands. Occasionally the flexors of the fore-arms and the abductors of the arms become spastic, muscles of the face almost constantly suffer, muscles of the lower extremities rarely.

The affected muscles are the seat, during the attack, of fibrillary twitching. The attacks often last several days (seven to twelve), unless terminated by the very free use of morphia.

The galvanic irritability of the nerves is found to be greatly increased, also the mechanical irritability of both nerve and muscle. Knee-jerks exaggerated during attack, absent in intervals. Edema of the hands and arms, with herpetic eruptions frequently to be seen after particularly severe attacks. The quantity of urine excreted during attacks is usually normal in amount, and contains urea and indican in great excess. Patient has been under observation for more than three years, and it has been noticed during the past two years that he has been getting gradually dull and apathetic. It takes him a long time to answer questions, he complains of general numbness, his face and lips are swollen, symptoms closely resembling those seen in myxœdema.

Tetany may be divided into three varieties:

1. Epidemic or "rheumatic" tetany, common in Europe, but extremely rare in America. The course is acute and favorable.

2. Tetany from exhausting causes, as lactation, diarrhœa, etc. Course is chronic and favorable.

3. Tetany from removal of the thyroid glands. Course generally is usually either quickly fatal or chronic and incurable.

4. A form of tetany occurring in cases of dilatation of the stomach. Very fatal.

Infantile tetany is excluded from above di-

vision, as what is so frequently called tetany in infants is not that disease. No doubt true tetany may occur in childhood.

DR. JOHN T. CARPENTER, of Pottsville, Pa., read a paper on

TETANY AND A NEW THEORY OF ITS PATHOLOGY.

The author defined tetany as a nervous disorder accompanied by tetanic spasm of an intermittent character, which may extend from the extremities to the jaw and be reproduced during the periods of intermission at will by pressing sure on the trunk of the affected nerve trunk or over the blood vessel obstructing the circulation.

A historical version of the disease was given. Tetany was regarded not as a special disease, but as a sequel of precedent phenomena only. The affection was regarded as the result of septic absorption. The diminution of cases of tetany coincident with the successful treatment and the prevention of septic poisoning, was regarded as an argument in favor of the connection between septicæmia and tetany. Cases illustrating this view were cited. The views previously held in regard to the pathology of tetany were discussed and considered as tenable.

DR. FRANCIS P. KINNICUTT, of New York: I have seen but two cases of intermittent tetany, both occurring in patients with dilatation of the stomach. In one the dilatation was due to pyloric stricture resulting from cancer; in the other there was non-malignant stricture. In both of these cases the conditions were favorable to absorption of poisonous matter.

DR. F. T. MILES, of Baltimore, reported the case of a young woman, aged 22 years. She had suffered from six to eight years from dilatation of the stomach. She had vomited acid matter, but never offensive. She had several times had numbness of fingers and toes. She suffered her first attack of tetany twenty-four hours before her death. In this case the stomach had never been washed out.

DR. A. JACOBI, of New York, had been struck with the stress laid by the readers upon sepsis as the cause of tetany. In one of the cases reported by Dr. Stuart which he thought was due to absorption of putrid material, the stomach was twisted, and Dr. J. suggested that the intermittent contracture was due to nervous influence, resulting from the twisting rather than to absorption. He did not doubt that there were cases in which septic absorption produced such symptoms, but when we recall the fact that the contracture is temporary, we must conclude that the influences giving rise to that attack were also temporary. Many of these cases are, I think, the result of nervous irritation. In some of the cases reported I should attribute the condition to anæmia.

DR. JAMES J. PUTNAM, of Boston, remarked

that the reported cases of tetany showed such a variety of infectious sources, that it seemed hardly probable that they should act in such a similar manner unless there was something else behind. Two or three things are to be considered: First, the influence of habit. The disease set up by a variety of causes may continue as a result of habit. Second, the suggestion that in such cases of disordered action we have to deal with an over-sensitiveness of physiological arrangement is important. In these conditions we have the disordered manifestation of what is really a function, but one not ordinarily recognized as it has no independent existence. It would seem that in the absence of further knowledge with regard to infection, and the manner this infection arising from various sources may act, we should insist upon the possibilities of explanation which are presented to us by what we know of the physiology and disordered physiology of the nervous system, in attempting to explain conditions met with in this and similar diseases.

DR. JAMES STUART, of Montreal, said in connection with the influence of peripheral irritation, that in the cases of dilatation of the stomach where tetany had caused death, the symptoms came on five hours after the stomach had been washed out. This would point to irritation rather than decomposition as the active cause in this class of cases. There are many other cases where infection could not enter.

DR. JOHN T. CARPENTER, of Pottsville, said in regard to anæmia as the cause of tetany, that we should have to go back of the anæmia to the cause that produced it. He knew of no cause that would produce anæmia so surely as septic absorption.

AFTERNOON SESSION.

DR. A. B. BALL, of New York, read a paper on

THROMBOSIS OF CEREBRAL SINUSES AND VEINS.

The author first referred to the influence of the following factors in the production of thrombosis: 1. Blood stasis; 2. Vessel lesions; and 3. Blood changes. The anatomical conditions in the sinuses that favor thrombosis were described at length. A number of cases of marantic thrombosis of cerebral veins and sinuses in chlorotic girls.

The symptoms were next considered. Much importance has been attached to distension of external veins collateral to the internal veins supposed to be affected, giving rise to hæmorrhages and cedema. These signs are frequently absent and may be due to other conditions. The mobility of the symptoms has been considered of value. In these cases the cerebral symptoms undergo strange alterations not seen usually in other affections. Active delirium is exceptional.

The depression continues but alternates with a certain amount of improvement. Fever is absent at first, and if present is to be attributed to complicating conditions. Paralytic symptoms of varying extent are usually present. With the exception of the variation in degree the paralysis does not differ from paralysis from other causes.

DR. WILLIAM OSLER, of Baltimore, exhibited two specimens illustrating the conditions described by Dr. Ball. The first specimen was one of extensive thrombosis of the lateral sinus occurring in a man who died from phlegmonous erysipelas of the cheek. There were no special symptoms in that case.

The second specimen was from a woman dying of consumption. It was thought that gradually increasing coma and the onset of cerebral symptoms were supposed to be due to basilar meningitis.

DR. A. JACOBI, of New York, enumerated certain additional aiding causes. The first was a disproportion between the white and red blood corpuscles. The second cause was the relative absence of muscular tissue in a number of the veins. A third cause was absence of water in the blood, often due to the withholding of sufficient fluid in the diet of patients. The last cause referred to was weakness of the heart. When in exhaustive diseases the heart is allowed to become feeble, thrombosis, with all its bad results, must be expected. It is certainly a good therapeutic measure to stimulate and strengthen the heart in every disease that will last long or tends to terminate in exhaustion.

DR. WM. H. WELCH, of Baltimore, said: There is one point of great force in explaining the production of thrombosis; that is the possibility that there is some form of intoxication analogous to that produced experimentally by various substances, such as the fibrin ferment. Under such circumstances there is almost instantaneously extensive thrombosis wherever the ferment reaches. Pathologists are aware of the frequency with which thrombi, usually of a mixed character, are found in the cerebral sinuses, particularly the superior longitudinal sinus, in cases that have presented no symptom during life.

DR. SAMUEL C. BUSEY, of Washington, D. C., read a paper on

THE EFFUSION OF CHYLE AND OF CHYLE-LIKE, MILKY, FATTY FLUIDS INTO SEROUS CAVITIES.

The object of the paper was to present the subject of effusion of chyle, chyle-like and fatty fluids into serous cavities. It was limited to the effusion of such fluids into the cavities of the pleuro-peritoneum and tunica vaginalis.

Effusion into the pleural cavities, Chylo Thorax. Of this, including the doubtful cases, there have been ten cases reported. In five of these the

chyle poured directly from the thoracic duct. The diagnosis in these cases can only be made by evacuation and examination of the fluid. The prominent symptoms are dyspnoea and accumulation of fluid in one or both cavities. The prognosis is unfavorable and the treatment expectant.

Effusion into the tunica vaginalis testis.—The case of galactocoele reported by Vidal (de Caasis) seems to have been the first observation of this class of effusions. In two of the reported cases the paludous orifices of the vessels from which the lymph exuded were found. Since 1885 there have been reported in this country thirteen cases in which filaria were found, and two of these were cases of lymphocoele. It has not been shown, however, that filaria are present in every case of lymphocoele. The recent invasion of portions of the sub-tropical belt of this country by the filaria, and the reports of cases of disease with which the parasite has been so uniformly associated, together with the fact that the mosquito has been proven to be its intermediate host, present consideration of the highest importance to the profession and general public.

Chylous and oily ascites.—A tabulated statement arranged chronologically, presenting a condensed summary of the reports of cases of chylous and oily ascites, was given. The number of cases reported was thirty-three. Primary rupture occurred in but five cases.

The symptomatology of effusion of chyle into the peritoneal cavity is not sufficiently distinctive to differentiate such cases from ordinary ascites, and a diagnosis is only possible after examination of the evacuated fluid. Of the 33 cases 19 died, 9 recovered, and in 5 the result is not stated. Of the 22 cases of chylous ascites proper 12 died, 5 recovered, and in 5 the result is not stated. Meagre and unsatisfactory as are the clinical details of these cases, they point to two conclusions: 1. That a free and unobstructed channel of communication between the venous system and the chyle conveying vessels is essential to the proper nutrition of the body and preservation of life. 2. That death following the partial or complete obliteration of this communication is the result of inanition.

DR. WM. OSLER, of Baltimore, said that in ordinary post-mortem works it was not unfrequent to meet with varices of the chyle vessels of the mesentery covering the walls of the intestine. Sometimes there are extravasations which may form large chylous cysts.

With reference to chyluria he was positive that there was a non-parasitic form. He had made thorough examinations in one such case and failed to find filaria. On post-mortem examination nothing was discovered. Also in a case of lymph scrotum, he had examined the fluid and the blood and had found no embryos. He laid a great deal of stress upon these cases, as it is gen-

erally stated that these conditions are always parasitic.

DR. W. H. WELCH, of Baltimore, exhibited a specimen of chyle removed from the abdominal cavity of a boy 12 years of age. He described the chemical and microscopical characters of the fluid, and dwelt upon the importance of distinguishing between chylous and fatty hydrops.

DR. J. F. A. ADAMS, of Pittsfield, Mass., read a paper on

SUBSTITUTES FOR OPIUM IN CHRONIC DISEASES.

The disadvantages attending the use of opium are: 1. In an overdose it is a poison. 2. In ordinary doses its benefits are largely offset by various functional derangements. 3. Its use involves the danger of the opium habit.

Remedies that may be substituted for opium for the relief of pain. The antipyretics, antipyrin, acetanilide, phenacetin and exalgin have well grounded claims to be regarded as rivals of opium. They are, however, less certain and less prompt, particularly when pain is very violent. Antipyrin in five to ten grain doses had been found valuable as an analgesic particularly in headache, neuralgia and rheumatism.

Acetanilide he had found less active than antipyrin. He used it in doses of seven or eight grains. He had found it particularly serviceable in lumbago and dysmenorrhœa. In the latter condition one or two doses has afforded prompt relief.

Salicylic acid and its sodium salt should be included on account of their marked effect in the relief of pain in rheumatism, particularly its acute form.

Substitutes for opium to induce sleep.—Paraldehyde is an excellent hypnotic, although rather uncertain. Hydrate of amyl is generally preferable to paraldehyde, being more reliable as well as more agreeable. Sulphonal is more extensively employed than either of the above, and is applicable to all forms of insomnia.

Chronic diarrhœa.—It is probable that no remedy has been used in this affection so largely as opium. The effects of this mode of treatment have been far from satisfactory. Recently the author had treated these cases antiseptically with far better results. The remedy chiefly used has been sodium salicylate in five to ten grain doses three or four times a day. He had also used salol with success.

DR. G. M. GARLAND, of Boston, referred to the value of the fluid extract of gelsemium as a substitute for opium. In frontal headaches it has an admirable effect. It is used also with advantage in difficult and painful menstruation and certain forms of neuralgia. As a simple hypnotic gelsemium answers well in cases of temporary congestion with insomnia and headache. In hysterical conditions this agent will often induce

sleep in a short time. The drug is given in doses of five to ten drops every half hour until the desired effect is obtained or its physiological effect is produced in diplopia and ptosis. These appear sufficiently early to serve as a warning.

(To be concluded.)

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Meeting of the Fifth District Branch of the New York State Medical Association—The Excursion to Milford, Pa.—Mr. Rudolph Hering's Report on the Sewage System of New York—The Suicide of Dr. Tilden Brown—The Power of an Artificial Electric Current to Destroy Life.

The seventh special meeting of the Fifth District Branch of the New York State Medical Association was held at Port Jervis, Orange County, the last week in August. The place of meeting was the parlors of the Fowler House, and the session was one of interest both from a scientific and social point of view. The first paper was by Dr. W. B. Eager, of Middletown, on "The Use of Concentrated Lactic Acid." He had employed this agent with success in the case of epithelioma and other conditions, and, in fact, wherever acetic and nitric acids are generally used as escharotics.

Dr. J. H. Hunt read a paper on "The Treatment of Typhoid Fever," with special reference to the cold water method. It was accompanied by carefully prepared charts, with details of temperature, pulse, etc., and elicited a prolonged discussion, in which many valuable points were brought out. Dr. Alfred L. Carroll, of New York, exhibited a small and inexpensive apparatus, devised by himself, for the rapid estimation of CO₂ in atmospheric air. He said that the apparatus generally used was more or less expensive because the jar was accurately divided off into cubic centimetres, and on account of the accompanying mechanical contrivances. This one was made out of an ordinary pickle jar, a couple of rubber or cork stoppers, two or three feet of small rubber tubing, and three or four pieces of best glass tubing. Dr. H. B. Swartout, of Port Jervis, then read the notes of a case of empyema. The patient was presented for examination by those present, and the case was discussed at some length. An elaborate paper by Dr. T. H. Manley, of New York, who was unable to be present, on "Injuries of the Skull, with some Observations on One Hundred and Fourteen Cases," was read by title, on account of the lateness of the hour, and the Branch then adjourned, after a very interesting session.

Almost forty Fellows attended the meeting, and

a considerable number of them remained over night to go on a most attractive excursion to Milford, Pa., and the Sawkill Falls beyond, which had been provided by the Committee of Arrangements, of which Dr. J. H. Hunt, of Orange Co., was chairman. The company occupied two large eight-seated wagons, and thoroughly enjoyed the magnificent drive, over a road that might compare in smoothness with those in Central Park, through one of the most romantic regions in the country. Milford has always been noted for its exquisite scenery, which has long made it a favorite resort for artists, and on account of the numerous rains during the past summer, the rich foliage and the many beautiful mountain streams were at their very best. The weather was delightful, making every one feel in the most jovial spirits, and after their exhilarating drive to the north Sawkill Falls, the party enjoyed to the utmost the elaborate and appetizing supper which had been provided for them at the famous Fauchère House. There was then a pleasant evening ride of seven miles back to Port Jervis, after which everybody was ready to sleep the sleep of the just.

The next morning Dr. Hunt furnished a sumptuous breakfast in his little Memorial Hospital at Port Jervis, and after the night's refreshing slumber the company did ample justice to the many good things provided by his bountiful hospitality. It was a very informal repast, and the occasion was one of social pleasure which will long remain green in the memories of those who were present. The Hunt Memorial Hospital, which has only recently been erected, although small, is one of the finest and most completely equipped in the State, and its many admirable appointments and appliances were inspected with much interest; after which this pleasant outing came to an end, and all parted well pleased with the success of the seventh special meeting of the Branch.

About two years ago General Newton, Commissioner of Public Works, secured the services of a civil engineer of high repute, Mr. Rudolph Hering, to make a thorough examination of the sewage system of the city, and his carefully prepared and elaborate report—the only complete one on the matter that was ever made, has recently been submitted to the present Commissioner, Mr. Gilroy. In it Mr. Hering makes a detailed statement of the present condition of the sewers, and also expresses his opinion as to the measures that should be adopted for their improvement and the best means of keeping them in good condition. Upon the subject of flushing and cleaning he believes that rainstorms cannot be relied upon for this purpose, and that repeated flushing with properly proportioned quantities of water is required for pent-up sewage. By this process, he says, sewage may not only be kept much cleaner than at present, but stoppages and floodings caused by the accumulation of deposits can be reduced to a

minimum. Deposits become too firmly compacted, he claims, to be carried off by the average storm; while flushing, on the other hand, prevents deposits from accumulating. In other cities, according to the character of the district in which the sewers are placed the periods of flushing vary from once a fortnight to about once a year. In some places automatic flush tanks are used which discharge once or twice a day. The sudden discharge of a large quantity of water seems to him to be the thing desired. In the case of those sewers in the older part of New York which cannot be flushed because their interior surface is rough and irregular, manual labor is the only remedy until they can be rebuilt. Mr. Hering advises that gates should be provided in the main sewers in order to stop the ordinary flow of water for five or six hours before flushing; no other provision being necessary for accomplishing this purpose. The gates could be closed in the morning, and opened in the afternoon. He claims that if all the brick sewers were thus cleansed the yearly expense would be about \$11,000; while at present only about one-twentieth of the brick sewers are cleansed once a year, at an expense of over \$23,000.

Chief Engineer Horace Loomis, in charge of the Bureau of Sewers, in commenting on this part of Mr. Hering's report, has stated that he should be very much pleased to give his device for flushing a trial, but that the expense would be greater than Mr. Hering supposed. "According to his estimate," Mr. Lewis said, "it would cost about \$21,000 a year to clean all the modern brick sewers twice a year and all the pipe sewers four times a year. For the construction of the gates which he recommends, however, the original outlay would be quite large. It would probably cost about \$250 each for the gates and flushing chambers, and as a gate would be required for every thousand feet, this would impose an expense of \$1,250 for each mile of sewer. As there are about 400 miles within the city, the original cost of providing for this manner of cleaning and flushing would be \$500,000, and the interest on that outlay ought to be considered a part of the expense of operation. These figures will indicate that whatever may be done in this direction will have to be accomplished gradually."

Having mentioned one particular sewer which he thought especially adapted to make an experiment of the gate system in, he stated that if on trial it should be found to be successful there, there would be reason to hope that the department might be allowed to extend the system to other parts of the city. He then went on to say that he could foresee more possible dangers from the new system. Whenever sewers were extended through a low-lying district in which the cellars were below the sewer level, he thought a flushing would make things very uncomfortable

for people living above these cellars. There would also have to be special care taken, he said, that the flushing should take place when the tide was just right. Moreover, a shower would be liable to cause flooding when the gates were closed, and he therefore thought that with any such change in the sewer system back-water valves ought to come into general use.

It is certainly a curious circumstance that so soon after the interview with Dr. D. Tilden Brown, referred to in *THE JOURNAL* of September 7th, the Doctor should have committed suicide. On Wednesday night, September 4th, the unfortunate man hanged himself in his barn at Batavia, Ill. A few years ago Dr. Brown was well known to the medical profession in this State and throughout the country. For twenty years previous to 1875 he was Superintendent of the Bloomingdale Asylum, the department for the insane of the New York Hospital, and was regarded as a high authority in mental diseases. In 1875 a New York newspaper began a fierce assault upon the Bloomingdale Asylum because of alleged abuses existing there, and it is said that this attack so affected Dr. Brown that his health failed and his mind became unbalanced. In this condition his wife took him abroad for treatment. His insanity was of a mild form, and in an Edinburgh asylum a partial cure was effected. On their return to America he was placed in an asylum in Illinois, where his wife secured the position of matron for herself, and here what was believed to be the complete cure of the case was brought about. His son, Dr. F. T. Brown, lives in this city.

In an interview published since the suicide Mr. Charles E. Strong, who for the past twenty years has been one of the Board of Governors of the New York Hospital, thus refers to Dr. Brown and his sad history: "He was as competent a superintendent as Bloomingdale ever had. At the time of the exposure of alleged outrages there the confidence of the Governors in his integrity was never shaken. His only fault was that of over-confidence in his subordinates. He was a particularly sensitive man, however, and it was undoubtedly these attacks which made it necessary for him to go abroad for treatment. Since his return to America he has been in constant communication with his friends here. About two weeks ago a New York newspaper printed a sensational story, the substance of which was that Dr. Brown, the old Superintendent of the Bloomingdale Insane Asylum, who had himself become insane in 1875 and gone to Edinburgh for treatment, where it had been supposed by all his friends that he had died, had been discovered living on a farm at Batavia. If Dr. Brown has committed suicide, I believe it was for the reason that this story, in which the saddest portion of his life was reviewed, was called to his attention,

and the shock brought back his old mental affection. He was highly respected in Batavia, where he was practicing medicine with success."

Another of the now often repeated demonstrations of the force of an artificial electric current to destroy life was recently afforded in the dynamo room of the East River Electric Lighting Company in this city, where an experienced electrician, the Superintendent of Construction of the company, accidentally came in contact with the current and was struck dead in an instant. It was an alternating current and its force was in the neighborhood of 1,000 volts, considerably less than it is proposed to use in executing criminals under the new law. The final argument on the question of the constitutionality of this law, a question which involves the disputed power of an alternating current to kill, is about to be held at Buffalo, and this case may have considerable weight in the argument. In the experiments there to be made it is proposed to use an alternating current of from 1,500 to 2,000 volts, and it is contended by the contestants that even this force would not be sufficient to surely and instantaneously destroy life. P. B. P.

Multiple Gestation.

To the Editor:—The recent death of Mrs. Michael Dress, of Schuylkill Haven, recalls to my mind the following facts concerning her life:

I do not know at what age she was married, but during her marital relations she was the mother of the rather remarkable number of *twenty-eight* children at full term. The record of births I do not recall, but I do know that out of this number there were but two single births—the balance were in twins upon several occasions, triplets twice or three times, and quadruples once. The quadruple birth the children lived to grow up, and one of the number, a female, died from traumatic peritonitis some few years ago. The mother was a large, stout woman, and reached the age of over sixty years. Her habits of life were those peculiar to hard out-door work and plenty of it.

As this case possesses some features worthy of record, I am glad to have possession of the facts in view that the case may be made an item of interest.

I presume it would properly come under the head of "Progressive Uterine Fecundity."

Very truly,

D. W. BLAND, M.D.

Pottsville, Pa., September 17, 1889.

PROF. RAY LANKESTER, who was attacked with serious illness while in Paris, has, under the care of Dr. Faure Miller, now completely recovered and has returned to England.

MISCELLANY.

THE GOLDEN BELT DISTRICT MEDICAL SOCIETY will hold its Fall Meeting at Salina, Kan., on Thursday next. Sessions at 2 P. M. and 7:30 P. M.

SCARLET FEVER has become epidemic in Birmingham, Eng. The situation is serious. Most of the schools are closed, and the hospitals are so crowded with patients that auxiliary wards must be opened.

THE AMERICAN PÆDIATRIC SOCIETY at Baltimore, elected the following officers: President Dr. J. Lewis Smith, of New York; secretary, Dr. W. D. Booker, of Baltimore; recorder, Dr. William P. Watson, Jersey City; treasurer, Dr. Charles Warrington Earle, of Chicago, and Dr. L. Samuel Holt, member of council.

THE DESTRUCTION OF MOSQUITOES.—*The Microscope* says that Robert H. Lamborn has placed in the hands of Morris K. Jessup, of the American Museum of Natural History, New York, the sum of \$200, to be paid in three prizes of \$150, \$30 and \$20, for the three best essays on the destruction of mosquitoes and flies by other insects. It is suggested that the dragon fly is an active, voracious and harmless "mosquito hawk," and that it might, if artificially multiplied, diminish the number of smaller insect. A practical plan is called for in the breeding of the dragon fly or other such destroyer in large numbers, and its use in the larva, pupa or perfect state, for the destruction of mosquitoes and flies in houses, cities and neighborhoods.

DIPHThERIA EPIDEMIC.—The prevalence of diphtheria in Marion, Ind., has created such alarm that the public schools were ordered closed last Monday for one week. About a dozen deaths have occurred. The point of greatest danger is believed to be passed, but the schools were ordered closed as a precautionary measure.

AN EPIDEMIC of a disease resembling dysentery has been raging near Meadowville, W. Va. Twelve persons have died. About twenty other cases are reported.

JACOB RODGERS died last week at Pittston, Pa., aged 111 years. He was born near Pittsburg, January 1, 1778. He was in the war of 1812, and was wounded at the battle of Lundy's Lane. By his first wife he was the father of fifteen children, and by his second of six. Nine of the twenty-one are living, one of them being 82. Mr. Rodgers had used tobacco for nearly 100 years. Until a few months ago he read without spectacles.

SHELBY COUNTY MEDICAL SOCIETY.—The next meeting of this Society will take place on Monday, October 14, 1889, at the Ray House, Shelbyville, Ind. The following papers will be read and discussed: "Management of Normal Labor, with Particular Reference to the Employment of Antiseptics in Midwifery Practice," by Dr. J. W. Green, Shelbyville; "The Use of Ergot in Labor," by Dr. S. L. Strickler, Boggs town; "Practical Obstetrics," by Dr. John Moffett, Rushville; "Delivery of the Placenta, with Report of Cases of Adherent Placenta," by Dr. M. R. Gilmore, Boggs town; "Management of Shoulder Presentations," by Dr. Edward F. Wells, Shelbyville; "Post-partum Hemorrhage, with Report of Cases," by Dr. J. W. Bowlby, Marion; "Puerperal Eclampsia, with Report of Cases," by Dr. T. R. Rubush, London; "Management of the Perineum, with Report of a Case of Rupture," by Dr. I. W. Trees, Smithland.

LETTERS RECEIVED.

Dr. M. J. Dudley, Sonoraville, Ga.; Dr. G. L. Morgan, Wichita, Kan.; Dr. S. P. Heilman, Heilmandale, Pa.; Dr. D. A. K. Steele, Chicago; J. B. Lippincott Co.; Philadelphia; Munnu & Co., New York; Dr. Landon B. Edwards, Richmond, Va.; Dr. A. L. Hummel, Philadelphia; Dr. G. Betton Massey, Philadelphia; Dr. James H. Jackson, Dansville, N. Y.; Henry Bernd & Co., St. Louis, Mo.; Dr. C. C. Hunt, Dixon, Ill.; J. Walter Thompson, New York; Dr. C. R. Reed, Middleport, O.; Dr. G. L. Collins, Providence, R. I.; Dr. H. Cushman, Stanton, Neb.; Ketteredge & Moran, Ann Arbor, Mich.; Dr. J. W. S. Gouley, New York; Mast, Crowell & Kirkpatrick, Springfield, O.; Evening Bulletin, San Francisco, Cal.; Dr. J. C. Wiesen, Philadelphia; Dr. F. M. Pendleton, Magnolia, Ill.; Dr. B. T. Fisher, Indianapolis, Ind.; Dr. W. Freudenthal, New York; Dr. R. R. Walker, Paris, Tex.; Doliber Goodale & Co., Boston; Dr. Wm. C. Dabney, University of Virginia, Va.; Dr. Dwight L. Hubbard, New York; Dr. Max Thorner, Cincinnati, O.; Dr. J. H. C. Simes, Philadelphia; Oneita Spring Co., Utica, N. Y.; Roseberry Nutrolactis Co., E. Merck, New York; Dr. Mary M. Cutler, Pomeroy, O.; Dr. I. E. Atkinson, Baltimore, Md.; Surgeon-General John B. Hamilton, Washington, D. C.; J. B. Lippincott Co., Philadelphia; Dr. L. H. Wood, Denver, Col.; Dr. John S. Lewis, Dubuque, Ia.; Dr. K. M. F. Sandberg, Chicago; Dr. R. J. Dungleison, Philadelphia; Ward Bros., Jacksonville, Ill.; Dr. F. M. Thomas, Samantha, O.; Dr. A. K. Conrad, Portageville, Mo.; Dr. B. F. Hart, Marietta, O.; E. Steiger & Co., New York; Dr. W. H. Geddings, Bethlehem, N. H.; Dr. W. R. Tipton, Las Vegas, N. M.; Dr. Martha C. Holmes, New York; Dr. George A. Dixon, New York; Dr. F. King, New York; Dr. John O. Roe, Rochester, N. Y.; *The Lancet*, London, Eng.; H. Hornfeld, Berlin, Germany; Parke, Davis & Co., Detroit, Mich.; Dr. A. M. Vail, Rock Rapids, Ia.; Dr. Geo. T. Welch, Keyport, N. J.; J. Astier, Paris, France; George Kiel, Philadelphia; I. Haldenstein, New York; Dr. J. Haller, Lanark, Ill.; Lea Bros. & Co., Philadelphia.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from September 14, 1889, to September 20, 1889.

Col. Andrew K. Smith, Surgeon U. S. Army, granted leave of absence for fourteen days on surgeon's certificate of disability, by direction of the acting Secretary of War. Par. 1, S. O. 214, A. G. O., September 14, 1889.

By direction of the acting Secretary of War, First Lieut. Freeman V. Walker, Asst. Surgeon, is relieved from duty in the Dept. of Texas, and will, upon the expiration of his present leave of absence, report in person to the commanding officer, Jackson Bks., La., for duty at that station, and by letter to the commanding General, Div. of the Atlantic. Par. 2, S. O. 212, A. G. O., September 12, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending September 21, 1889.

Medical Inspector G. S. Beardsley, granted six months' leave, with permission to go abroad.

Surgeon M. L. Ruth, order granting furlough revoked and placed on waiting orders.

Medical Director Hudson, Medical Inspector Woods and Surgeon Dickinson will continue as President and members of an Examining Board for examination of applicants for the position of Asst. Surgeon in the Navy at San Francisco, Cal., until June 30, 1890.

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ADDRESSES.

THE CHAIRMAN'S ADDRESS.

Delivered in the Section of Diseases of Children at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY J. A. LARRABEE, M.D.,
OF LOUISVILLE, KY.

Gentlemen:—Again the bell has struck a warning note upon the horologe of time; again we have assembled for the purpose of contributing our mite to a science which can no longer be called "a conjecture," a science which challenges the admiration of the whole civilized world. Like a "Grand Army of Veterans" we meet around the campfire of the fortieth annual reunion of the American Medical Association. Permit me, then, to greet you as valiant captains of a mighty host of warriors, each bringing the trophies of successful battle with the common enemy of mankind. I see before me those who, amid frosts and snows of a northern winter, have fought the savage foe whose wolfish grasp lay at the throat of the child; those who, beneath a semi-tropical sun, single-handed and alone have fought the pestilence, which walketh in darkness and which wasteth at noonday; those who, along the bold headlands of New England, have met the enemy "upon the storm-swept hill;" those who, upon the fertile plains of our western prairies, have fought long and hard with the hydra-headed monster of the soil. From the North and the South, from the East and the West we meet around the altar of legitimate medicine. Here we renew our obligations to science. Here we pledge anew our friendships and extend our acquaintance. Here, also, we cherish the memory of those who, having rested from their labors, their works do follow them.

The decade just ended has been conspicuous for the commemoration of historic events. Centennial anniversaries have been largely the order of the day, and we have been especially favored in that our meetings have been associated with these pleasant gatherings. Those among us who are so fortunate as to possess a record of revolutionary ancestry are especially congratulated. It is with commendable pride that we revert to the fact, which ought never to be forgotten, that in

the long and perilous struggle for freedom, which laid the foundation of the great American nation, the noble profession to which we belong has always been in the front, not only of pioneer life, but also in true, self-sacrificing patriotism; that the title of Doctor of Medicine shines forth like stars in the emblazoury of our national escutcheon, from Joseph Warren, of Bunker Hill, to Hugh Williamson, of Camden, and from Lexington to Yorktown. But the ground upon which we meet to-day is still more precious to the historian. Not only does the pious, stern and relentless countenance of the Puritan rise up before us, but by the magic touch of the classic pen of our own Longfellow the cold and silent finger of the "skeleton in armor" is pointed backward through the dim vista of the ages.

I well remember that when I was a boy and sat upon the hard wooden benches of a little red New England schoolhouse my sympathies were always aroused by a picture in the leaves of a well-worn history. That picture represented a very small man with a very large hat and a very long staff, and behind him followed seventeen as forlorn and pensive-looking creatures as ever figured in print. It was Roger Williams and his adherents being driven by religious persecution and hatred to seek a home or to die in the wilderness of Rhode Island. It is to this wilderness that we have been invited, and to this wilderness we have come to participate, with a generous and hospitable people, in the celebration of the two hundred and fiftieth anniversary of its settlement. In this history there is certainly food for thought and for congratulation. For thought, that many of the most important advances which have been made in medicine and surgery have been met by persecutions scarcely less vigorous and criticisms hardly less cruel. Old John Talbot, for daring to recommend a new, nauseous and bitter drug for the cure of His Majesty's ague, is here to be remembered; also (within the recollection of living men) the ridicule and professional ostracism, by the erudite editor of a Philadelphia newspaper, of the quackish doings of the Boston doctors in using anæsthetics for surgical operations; and our own Ephraim McDowell would have been driven into the wilderness by foreign persecutors had he not already

been in one. Congratulation, that an enlightened civilization has so far increased our charity that we are enabled to pursue in peace a science which loves truth, invites fact and discards superstition; that we no longer live in dread of a "doctors' mob" against dissection or the gibbet for vaccination. What place, then, more fitting for the burial of professional animosities than this! "Pathists" but poorly become men who are searchers after truth. The broad title of "Doctor in Medicine" should be the only distinction of those who should have no other rivalry than a generous emulation of who can do the best work and best agree.

The reformer is abroad in the land. His presence is felt in all quarters, from the halls of Congress to the lyceum club, in the church, in the political convention, and from "woman's rights" to temperance; on all subjects and on all occasions he "bobs serenely up." It is not strange, then, that medical societies should form no exception to the general rule. In our meetings he seldom contributes to the scientific discussions—never reads a paper. Ethical subjects offer a peculiar and luring attraction, and to avoid complete obscurity he proposes certain changes in established customs, by-laws and constitution, rules and regulations which no one ever found any fault with, and which, in the harmonious course of affairs, few knew to exist. These individuals would change some law at every meeting, and were they to be so fortunate as to enter the heavenly kingdom, would propose to change the laws which regulate the universe itself.

Pediatrics is not a forced specialty in practice. It is not a branch torn from the tree of general medicine and forced to grow apart from the parent stem. The diseases of infancy and childhood, while they possess something (nomenclature) in common with those of adult life, differ so widely in course, duration and consequences that they require especial study. Very many excellent practitioners, appreciating their want of familiarity with infantile symptomatology, decline positively to attend to this class of practice; while many more, less honest in their convictions, continue the practice, although distasteful to them. Pediatrics presents to all an open field and a rich harvest of useful knowledge to all who will become earnest workers. Many of our medical colleges afford no adequate advantages for the medical student to become acquainted with a class of patients who may constitute two-thirds of a general practice. Shall this Section, so important and useful in its labor in the past, so full of work for the future, be united like a set of lectures in one of these colleges, thrown in at the end of a course of obstetrics? An opportunity will be given in the open session at this meeting for you to decide. From this Section the greatest possible good to the general practitioner may be

expected. From its deliberations will originate wise and wholesome laws regulating matrimony, the propagation of healthful children, and the banishment from society of diseases worse than death. These, and many more considerations of equal importance, would seem sufficient plea for the separate existence of a Section in the purpose laid out by its distinguished founder.

Notwithstanding the year has chronicled a very decided advance in infantile therapeutics, the allegory of Addison—of the bridge of human life—still applies: "The pitfalls are still seen to be thickest near the entrance to the bridge." Infantile mortality from preventable causes is far greater than it should be. Your Chairman would venture the suggestion that a standing committee be appointed by the Section, whose duty it shall be to prepare a report upon vital statistics in infancy, said committee to be appointed each year, and said report to be read at a specified time in the meeting of this Section; statistics which shall constitute the basis of this report to be obtained from reliable mortuary reports of cities and towns, and also from the practice of those engaged especially in pediatrics.

In conclusion, gentlemen, it remains for me to express to you my appreciation of the high honor you have conferred upon me in calling me to preside over your deliberations. Esteeming, as I certainly do, the distinction you have placed upon me, I am also keenly sensitive of my own inadequacy. Wholly unversed in parliamentary usages, I beg your indulgence and request your kindly co-operation and assistance in the discharge of the duties which shall devolve upon the chair, that you may not have reason to regret your too partial choice.

ORIGINAL ARTICLES.

THE LEGAL RESTRICTION OF MEDICAL PRACTICE IN THE UNITED STATES.

Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY PERRY H. MILLARD, M.D.,

DEAN AND PROFESSOR OF CLINICAL SURGERY, MEDICAL DEPARTMENT UNIVERSITY OF MINNESOTA; ACTING ASSISTANT SURGEON UNITED STATES ARMY; FORMER SECRETARY MINNESOTA STATE BOARD OF MEDICAL EXAMINERS; EX-PRESIDENT MINNESOTA STATE MEDICAL SOCIETY, ETC.

Gentlemen: In reviewing the subject of medical legislation, I am fully cognizant of encroachment of a subject most fertile in theory and suggestion, but quite devoid of illustrative beneficial results; a subject of vital importance to the public and profession, yet receiving but little aid and encouragement from either source in attempts at reforms. The history of medical legislation in this country shows, quite uniformly, that legislatures are quite apathetic when requested to enact

laws regulating medical practice, and are most loth to believe that the best interests of the public are subserved by such laws, many even asserting their belief that all legislation of this character savors of trades unionism. In our attempts at medical reform, the demeanor of the profession has likewise been most discouraging. We concede to all the right of conservatism, but deem it the duty of all good citizens to pass conscientious judgment upon all issues of vital importance in their chosen avocations.

The history of medical legislation is quite instructive. The United States is the only country among civilized nations devoid of adequate medical legislation; even the Chinese are protected by efficient medical legislation, and in our Scandinavian countries the minimum time of study is seven years. The history of medical legislation is most ancient. We ascertain by research that in 1237 the College of Salino instituted a series of regulations to the effect that no one should practice physic who had not studied philosophy three years and physic five, and had obtained the license of the College after undergoing an examination at the end of such period. Very similar regulations were shortly thereafter adopted by the English University, and the standard of medical knowledge and education was thereby considerably raised and a great impetus given to the pursuit of medicine. The first degrees in medicine were granted in 1384. We find by comparison that 150 years before degrees or diplomas were granted, the universities licensed to practice only after the candidates had pursued philosophy three years and physic five, and that 650 years thereafter 70 per cent. of the colleges of the United States only require two courses of lectures and three years of study. Fearing I may be charged with unfairness in my comparative illustration, I will direct your attention to the somewhat suggestive fact that all the colleges of to-day require that our boys be of good "moral character."

The first law regulating the practice of physic was enacted in 1511. The practice of medicine at this time was largely conducted by the ignorant portion of the artisan class. Medical degrees, however, were held in high esteem by the people. The progress of medicine in the seventeenth century has been ably pictured by Macaulay in his "History of England," vol. 1, page 310. "Medicine," he says, "which in France was still in abject bondage, and afforded for Mollière an inexhaustible subject for ridicule, had in England become an experimental and progressive science, and every day made some new advance, in defiance of Hippocrates and Galen. The attention of speculative men had, for the first time, been directed to the importance of sanitary police. To that period belong the chemical discoveries of Boyle and the first botanical re-

searches of Sloan. One after another, phantoms which haunted the world through ages of darkness, fled before the light, and astrology and alchemy became jests. Upon research I find that in ancient times medical legislation and higher medical education progressed hand in hand. Upon research, I am unable to find that any court or legislative body in the British Isles or Continental Europe ever questioned the propriety of effective medical legislation.

The experience of the various States in the United States is, however, suggestive. Previous to the present decade, no State in the Union possessed an efficient medical practice act. The laws in existence in the few States possessing the same were too inefficient to merit mention at this time. The most efficient of them only required the filing of a copy of a diploma with some office of record, generally a clerk of court or county clerk. Many of these diplomas were purchased outright, as was afterwards proven in the famous Buchannan diploma cases.

The first State to pass a law based upon rational principles was North Carolina. The efficiency of this act was practically emasculated, as the bill possessed no penalties. Among the earlier acts of the present decade were what was known as the Illinois Act. This act provided for the issuance of a license by submission of a diploma from a school of medicine recognized by the board. This act was, in my opinion, quite as radical as could have been enforced at the time of its enactment. The essential features of this bill were copied in the subsequent practice acts of Minnesota, from 1882 to 1887, Missouri, Iowa and West Virginia. The practice acts of the above-named States were retroactive in their features or provisions, and were applicable to upwards of 15,000 physicians. The gentlemen entrusted to execute the law in these States are the only persons that can actually recognize the obstacles and intolerable embarrassments encountered in the execution of the act in the above named States. We received most captious criticism and encountered formidable opposition from the sources we least expected, namely, the profession itself. This criticism and opposition did not come from the narrow-minded cynic alone, but, to the shame and disgrace of the profession, from a large number of our medical institutions, some of which, we regret to mention, were manned by men of eminence and great learning, but had carelessly, for financial reasons only, given cognizance to an opposition to a reform that was entitled to an undivided support and encouragement from every member of the profession from the Atlantic to the Pacific. Of the nine attempts to repeal the present Minnesota Medical Practice Act at the last session of the legislature of Minnesota, a majority of the professed amendments emanated directly from the medical colleges

themselves. The profession, gentlemen, is not cognizant of the great trials encountered in bringing about a fair degree of efficiency of the present inefficient acts. To John H. Rauch belongs the greatest credit in making the so-called Illinois Act efficient in different States. He is the true father of the coming reform, and we are only following in his footsteps. His influence in this matter has been most potent for good, and has directed the attention of both the profession and public of the great need of the present attempted reform. We trust he may be spared to witness a practical application of his labors. The States possessing quite ideal medical practice acts at present are, Minnesota, Montana, Virginia and North Carolina. The Minnesota Act is superior to that of the other States in that it requires that all persons desiring a license to practice shall have taken at least three courses of lectures of not less than six months' duration each. These requirements, in addition to the examination, make a tolerable safeguard for the public. In the future legislation by different States, I believe the profession can safely incorporate the main features of this act in their attempted legislation. It was drafted by me after five years' experience as executive officer of the former Minnesota Practice Act, and two years' successful operation in Minnesota has proven its merits. In the last two years this board has examined ninety-nine applicants for a license to practice and rejected thirty-five. All persons graduated since 1886 must furnish evidence of having attended three courses of lectures of not less than six months' duration each. As a result of this law, the sixty-four physicians that have been licensed to practice in Minnesota the last two years are nearly all graduates of McGill, University of Michigan, University of Pennsylvania, Chicago Medical College, and University of Minnesota. As an illustrative comparison, under the old Minnesota Act, which was the same as the present acts of Illinois, West Virginia, Missouri and Iowa, I licensed 146 physicians in 1885, and 280 in 1886, while the present board licensed sixty-four physicians from July 1, 1887, to July 1, 1889.

As a result of efficient medical legislation Minnesota possesses a smaller ratio of physicians to the population than any State in the Union. Instead of one physician to every 750 inhabitants, the last medical census shows but one to every 1,300. Through the courtesy of the Secretary of the Minnesota Board, I am permitted the first public announcement of these figures. I may state, however, that they are not made public with a view of promoting emigration. It is a pleasure to announce that both the profession and the public are quite uniformly supporting the law.

The profession is at present awakening to the

necessity of efficient medical legislation. The fields are fertile and the harvest shall be plentiful; the handwriting is on the wall, and the interpretation is easily read. The people have awakened to the fact that there are twice as many practitioners of medicine in this country as are commensurate with its legitimate wants. The number being as one to every 750 in the United States; one to every 1,660 in Hungary; one to every 1,639 in Italy; one to every 2,932 in Austria; one to every 3,225 in Germany; one to every 3,780 in France, and one to every 7,909 in Sweden. The great number of medical men in this country makes competition very sharp, and, in consequence, people too frequently suffer from dishonorable practices. My own observation teaches me that the people of this country take too many drugs; this is particularly true of the American born citizen. The people are also cognizant of the fact that the methods of medical instruction in this country is deserving of severe censure.

The report of the Commissioner of Education of the United States shows that in 1886 there were but \$2,671,490 in the grounds, buildings and apparatus of the 130 medical colleges of the United States. That the productive funds of the same were \$266,193, and the annual income from investments only \$22,000. Less than a dozen of these schools are in any way endowed. How best to prevent the flooding of this country with half educated medical men, is a vital question to both the public and profession at this time. After years of experience and observation in this country and Europe, I can unhesitatingly assert my conviction that our only remedy lies in efficient medical legislation. We are well aware that many of our medical colleges are honestly endeavoring to raise the standard of acquirements, and that in consequence their students have decreased in numbers and they have received but little encouragement at the hands of the profession itself. I believe that the adoption of a medical practice act in each State, possessing the features of the bill favored by the Commission on Uniform Medical Legislation, of which I have the honor to be Chairman, will afford the people and an overcrowded profession the much desired relief. This committee recommends to this Association for consideration, a bill calling for a State Board of Examiners to be appointed by the governor. A bill requiring that all persons commencing practice shall undergo an examination, at the hands of said board, that is both scientific and practical, but of sufficient severity to test the candidate's fitness to practice medicine. Before being allowed to compete for a license by examination, the candidate must submit a diploma from a recognized medical college that requires a preliminary entrance examination upon the following named branches, to-wit.: English grammar,

composition, geography, history, arithmetic, algebra, physics and the natural sciences, together with at least one of the following languages: Latin, French or German. In addition a curriculum requiring attendance upon at least three full and regular courses of lectures before graduation, of not less than six months' duration each.

A bill providing that license may be refused or revoked for chronic inebriety, criminal abortion and gross unprofessional conduct. Also, that all licenses be a matter of public record by being recorded with a clerk of court or some officer of public record.

I believe, gentlemen, that the best interests of the public and profession will be subserved by efficient legislation, as recorded by this committee. Opposition at this time is evidence of a selfish motive, or a fatal weakness, if emanating from any special school of practice. Experience has proven that the so-called mixed boards have worked in harmony in the different States possessing the so-called Illinois Act, or rather the act recognizing a diploma as entitling the possessor thereof to registration. If a bill is passed by the different States calling for an examination of all applicants for a license, I can easily foresee a radical change in the character of instruction afforded by a majority of the medical colleges of this country. The reputation of colleges will not depend so much upon the number of students as upon the actual character of the instruction afforded the students. Such is the case in Europe, and should be the case in America.

In conclusion, gentlemen, let me bespeak for our noble calling a higher appreciation at the hands of the public. Our destinies are the product of our own action. I believe the future can be made more desirable than has been the past; as we sow, so shall we reap. I know it is in our power to afford the public a better profession, and realize that the best interests of the public will be subserved thereby. Let us endeavor to reduce the number of medical colleges, and, at the same time, raise the standard of instruction afforded.

DR. N. S. DAVIS, of Chicago, said that the subject of the paper was a most important one. The laws should be sufficiently harmonious in the various States to enable one, after once qualifying, to practice medicine in any State. They would be eligible to a license for practice in any other State without another examination. The objectionable feature of the Illinois State law is the fact that the diploma itself enables one to obtain license to practice. The medical colleges should be made to rival each other in the character of the work done by them. The student endeavors to get through his college work in the shortest possible time and at the least expense. From one-half to two-thirds of the students try to find

the cheapest and easiest college. Teaching and licensing should be in separate hands. A high grade of preliminary education should be demanded. The State Board should be appointed by the governor with the concurrence of the senate.

DR. GIBON, U. S. N., was of the opinion that preliminary education is the most important consideration.

DR. SMART, U.S.A., accorded with Dr. Davis regarding the requirements preliminary to practice.

DR. SCAMMON, of Tennessee, agreed with Dr. Davis in the main, but thought the board should not be appointed by the governor, but be elected by the physicians.

AN ACT ENTITLED, AN ACT TO REGULATE THE PRACTICE OF MEDICINE AND SURGERY, TO LICENSE PHYSICIANS AND SURGEONS, AND TO PUNISH PERSONS VIOLATING THE PROVISIONS THEREOF.¹

Be it enacted by the Legislature of the State of—

SECTION 1. The Governor shall appoint a Board of Examiners, to be known as the State Board of Medical Examiners. Said Board shall consist of nine members. The appointees shall be persons of recognized professional ability and honor. The term of office of said Board shall be three years, or until their successors are appointed; *provided*, however, that the members thereof shall be divided into three classes, each class to consist of three persons. The first class shall hold office under said appointment for one year, the second for two years, and the third for three years from the date of their appointment. It is further provided that no member of said Board shall serve more than two terms in succession. No member of any college or university having a medical department shall be appointed to serve as a member of said Board.

SEC. 2. Said Board of Medical Examiners shall elect a President, a Secretary and a Treasurer. It shall have a common seal, and the President and Secretary shall be empowered to administer oaths in taking testimony upon any matter pertaining to the duties of said Board. Said Board shall hold meetings for examinations at the Capitol Building of this State the first Tuesday of January, April, July and October of each year, and at such other times and places as the Board shall deem expedient. Said Board shall keep an official record of all its meetings; also an official register of all applicants for examination for a license to practice medicine and surgery in this State. Said register for license shall show the name, age and last place of residence of each candidate, the time he or she has spent in medical study, in or out of a medical school, and the names and locations of all medical schools which

¹ Copy of Act submitted by Committee on Medical Legislation, and read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

have granted said applicant any degree or certificate of attendance upon lectures in medicine. Said register shall also show whether such applicant was rejected or licensed under this Act. Said register shall be *prima facie* evidence of all matters therein contained.

SEC. 3. All persons hereafter commencing the practice of medicine or surgery, in any of its branches, in this State, shall apply to said Board of Medical Examiners for a license so to do. Applicants for examination shall be divided into three classes, to wit: Persons graduated from a legally chartered medical school not less than five years before the date of application for a license; second, all other persons graduated from a legally chartered medical school, and medical students taking a regular course of medical instruction. Applicants of the first class shall submit to examination upon the following named branches, to wit: *Materia medica* and therapeutics, obstetrics and gynecology, practice of medicine, surgery and surgical anatomy. Those of the second and third classes shall submit to examination upon anatomy, physiology, chemistry, *materia medica* and therapeutics, histology and pathology, hygiene, practice of medicine, surgery, obstetrics and gynecology, diseases of eye and ear, medical jurisprudence, and such other branches as the Board may deem advisable. The questions for examination of applicants of the first and second classes shall be the same in branches common to both. Said Board shall not license graduates of later date than January 1, 1890, until satisfactory proof is furnished that the applicant has studied medicine and surgery three years before graduation; attended at least three full courses of medical lectures, of not less than six months' duration each; is of good moral character and over twenty-one years of age. Applicants of the third class, upon completion of two full courses of lectures, of not less than six months' duration each, can be examined upon the following named branches, to wit: Anatomy, physiology, chemistry, histology and pathology, and *materia medica* and therapeutics. If said examination is satisfactory to said Board, it may issue a certificate that the applicant has passed a final examination in these branches. All examinations shall be both scientific and practical, but of sufficient severity to test the candidate's fitness to practice medicine and surgery.

SEC. 4. All examinations shall be in writing, unless otherwise requested by applicant. In all oral examinations the questions and answers must be of a fundamental character and, except in therapeutics, such as can be answered in common by all schools of practice. If said examination is satisfactory the Board shall, provided that the applicant shall be at the cost and trouble of securing the presence of such dean or president, and that this shall not interfere with the

regular conduct as to time and place of the examination, issue a license entitling the applicant to practice medicine in this State. The votes of all examiners shall be by yes or no and written, with their signatures, upon the backs of the examination papers of each candidate for the respective branches. A license shall not issue unless the applicant passes a satisfactory examination on at least two-thirds the branches required by this Act. Said examination papers shall be kept on file by the Secretary of said Board, and shall be *prima facie* evidence of all matters therein contained. All licenses shall be signed by the President and Secretary of said Board, and shall be attested by the seal thereof. The fee for examination shall be \$15 for each applicant of the first and second classes, and \$20 for each applicant of the third class. It shall be paid to the Treasurer of the Board and applied towards defraying the expenses thereof.

SEC. 5. The Board may, by a unanimous vote, refuse to grant or revoke a license for the following named causes, to wit: Chronic and persistent inebriety, the practice of criminal abortion, or for publicly advertising special ability to treat or cure diseases which, in the opinion of said Board, it is impossible to cure. In complaints for violating the provisions of this section the accused person shall be furnished with a copy of the complaint and given a hearing before said Board, in person or by attorney, and can finally appeal from the decision of said Board to the appointing power thereof.

SEC. 6. The person so receiving said license shall file the same, or a certified copy thereof, with the Clerk of the District Court in and for the county in which he or she resides, and said clerk of the court shall file said certificate, or copy thereof, and enter a memorandum thereof, giving the date of said license and the name of the person to whom the same is issued, and the date of said filing, in a book to be provided and kept for that purpose; and said clerk of the court shall each year furnish to the Secretary of said Board a list of all certificates on file in his office, and upon notice to him of the change of location or death of a person so licensed, or of the revocation of the license granted to such person, said clerk shall enter, at the appropriate place in the record so kept by him, a memorandum of said fact, so that the records so kept by said clerk of the court shall correspond with the records of said Board, as kept by the Secretary thereof. In case a person so licensed shall move into another county of this State, he or she shall procure from the clerk of the court a certified copy of said license, for which no charge shall be made, and then file the same with the Clerk of the District Court in the county to which he or she shall so remove. Said clerk shall file and enter the same with like effect as if the same was the original license.

SEC. 7. This Act shall not apply to commissioned surgeons of the United States Army, Navy or Marine Hospital Service, to physicians or surgeons in actual consultation from other States or Territories, or to persons temporarily practicing under supervision of an actual medical preceptor.

SEC. 8. Any person shall be regarded as practicing medicine or surgery, within the meaning of this Act, who shall append the letters M.D. or M.B. to his or her name, or repeatedly prescribe or direct, for the use of any person or persons, any drug or medicine or other agency for the treatment, cure or relief of any bodily injury, infirmity or disease. This Act shall not apply to dentists or midwives in the legitimate practice of these branches exclusively.

SEC. 9. Any person practicing medicine or surgery in this State without first having obtained the license herein provided for, or contrary to the provisions of this Act, shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not less than \$50 or more than \$100, or by imprisonment in the County Jail for a period of not less than ten or more than ninety days, or by both fine and imprisonment. Justices of the peace and the respective municipal judges shall have jurisdiction of violations of the provisions of this Act. It shall be the duty of the respective county attorneys to prosecute violations of the provisions of this Act.

SEC. 10. All Acts or parts of Acts now existing not in accordance with the provisions of this Act, are hereby repealed.

SEC. 11. This Act shall take effect and be in force from and after its passage.

Signed :

PERRY H. MILLARD, *Ch'n*, St. Paul, Minn.,
HOSMER A. JOHNSON, Chicago, Ill.,
R. H. PLUMMER, San Francisco, Cal.,
C. W. DULLES, Philadelphia, Pa.,
GEO. H. BELT, Boston, Mass.,

Com. on Uniform Medical Legislation of the American Medical Association.

ON THE CONNECTION OF CHRONIC DISEASES OF THE UPPER AIR-PASSAGES WITH ABDOMINAL HERNIA.

Abstract of a paper read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, held at Newport, R. I., June, 1889.

BY W. FREUDENTHAL, M.D.,

PHYSICIAN TO THE GERMAN POLIKLINIK, N. Y.

If it be true that "necessity is the mother of invention," then no period was more suitable for that great invention, the laryngeal mirror, than the present one.

The tendency of modern civilization is to imprison us closely within the walls of our cities and houses. As a result we find an increased tendency to the development of diseases of the

air-passages, together with various less conspicuous sequelæ. As an example of these I may mention *abdominal hernia*. As regards the origin of ruptures caused by nasal affections, I made the following remarks before the German Medical Society of New York (*Zur Aetiologie der Unterleibsbrüche*, *N. Y. Med. Presse*, Oct., 1888): "If primarily we consider this question from a purely theoretical standpoint, nothing is easier than to prove the *possibility* of the origin of a hernia from an affection of the nose, in the same way as, long ago, it has been considered proven as the result of a bronchial affection. The force of the cough, pressing the abdominal contents against already non-resistable parts of the lower abdomen, increases the susceptibility to the formation of a hernial sac, and afterwards a hernia, and this is accomplished by intensified and oft-repeated action of the intra-abdominal pressure."

Intra-abdominal pressure has played a great rôle in former years, especially in Germany. Modern surgeons have again rescued it from oblivion; into which it seemed to have fallen. Already in Rust's "*Handbuch der Chirurgie*" (vol. 8, pp. 360 ff.) we read that even when a hernia at last suddenly appears, after a more or less violent exertion, still its origin has been prepared by oft-repeated pressure of the contents through a slow but long continued dilation of the peritoneum.

A further practical use of this idea was made by Friedberg (*Vierteljahrschr. f. prakt. Heilk.* Prag. 1864), who showed the connection between the origin of herniæ and congenital phimosis in boys. The patency of the processus vaginalis peritonei can not, according to him, be a sufficient cause for the origin of herniæ, as this has been found open in many cadavers without a hernia being present. Still, however, this can give the predisposition which only awaits some exciting cause to produce a hernia. This idea of the origin of a hernia from a marked case of phimosis has, of late, been taken up and is held by quite a number of writers, especially by Kempe, Osborn (who also gives an explanation for the greater frequency of right-sided herniæ in infants), Hans Schmid, and Karewski. Now, compare the pressure upon the abdominal contents induced by a phimosis, with that of chronic diseases of the upper air-passages. "When the nasal secretion is normal, the pressure upon the abdominal contents is so slight that it need not be regarded. When, however, . . . pathological changes take place . . . then the expiratory straining to remove the pent-up secretions increases with the constant and ever changing inability to get rid of it." [See above cited paper.] The expiratory efforts must, therefore, become very strong and continuous. A man with hypertrophy of the turbinated bodies, or with a nasal catarrh, or with a strong pharyngitis granulosa, will hawk, clear his throat

and blow his nose under certain conditions all day long; or, in other words, he will constantly increase the intra-abdominal pressure. A child with a phimosi will do this at the most once every hour and, as I think, in a manner relatively much weaker.

If we examine this theory somewhat more closely, the question which everybody naturally will ask is this: Is there a greater frequency of herniæ in countries where nasal diseases abound? The *N. Y. Med. Record* answered this in the negative, and affirmed that in Germany 82 out of 1,000 conscripts are rejected on account of hernia, in France 65, in Italy 76, while in the northern army only 50 were not taken on account of hernia, although nasal diseases in the United States are extraordinarily common. I refuted these statements by publishing complete statistics of the Austro-Hungarian monarchy, as a substitute for the German, from whom statistics could not be obtained, and came to the conclusion that *the ratio of North America, a country much troubled by nasal diseases, to Austria, much less infested with them, is as 50 to 14. In other words: Hernia is in the United States three and a half times as frequent as in Austria.*

Reasoning from analogy I conclude that in Germany 82 out of 1,000 are not rejected on account of hernia. I shall to-day give you the contents of a table to which my attention was kindly called by the director of the Kaiserliches Gesundheitsamt in Berlin.

It is as follows (Veröffentl. des K. Gesundheitsamtes, 1887):

Year.	Were examined in the Departments of the 1-15th Army Corps.	Rejected, ratio per 1,000.
1876	786,054	128.2
1877	782,482	114.1
1878	822,412	105.6
1879	857,374	110.0
1880	875,480	109.3
1881	864,812	90.1
1882	851,801	85.8
1883	869,572	78.7
1884	884,250	76.7
1885	900,849	74.3

Average for the ten years, 96.6.

According to this average, therefore, there were rejected out of 1,000 conscripts, on account of *physical and mental defects of all kinds, altogether 96.6*; in the last four years (1883-1886) even less than 80. That we, therefore, should meet with such a high average (as 82) for the ruptured alone, is by no means correct. In my opinion the proportion ought to be even more favorable than in Austria; for, as a statistical report of the Royal Bavarian Ministry of War of the year 1883 shows (*Zeitschr. des K. Bayerischen Statist. Bureau, München, 1884*), there were rejected, "on account of infirmities of the abdomen (mostly ruptures)," 1.4 per cent., or 14 per 1,000. If we subtract the less frequent other

abdominal diseases, we get for herniæ alone a number that is decidedly below 1.4. As these proportions in the other parts of Germany are alike, perhaps even better, we may conclude, with a probability bordering on certainty, that also in Germany, in accordance with the less frequent occurrence of nasal diseases, herniæ are found only one-third or one-fourth as often as in the United States, the country of nasal diseases, *ναῦτ, ἐξοχήν*.

Concerning Italy and France, I have received, through the kindness of both consulates at New York City, more accurate data.

In Italy, where people do not suffer much from nasal diseases, the figure was said to be 76. In reality the conditions are as follows:

Males of 20 years rejected from military service for abdominal hernia:

Year.	Number of those called, exclusive of those rejected for defects of stature.	Rejected for hernia.	Ratio per 1,000.
1858	250,699	4,052	16.2
1859	270,304	4,282	15.8
1860	224,340	4,401	18.0
1861	254,867	4,264	16.7
1862	273,664	4,506	16.5
1863	303,423	5,080	16.7
1864	297,742	4,796	16.1
1865	304,559	5,026	16.5
1866	317,031	5,260	16.6
1867	301,769	5,129	17.0

Average for the 10 years, 16.61.

France also has not, as was affirmed by the *Record*, 65 per 1,000, but only the following figures:

Ratio per 1,000: Year 1879, 23.2; 1880, 22.1; 1881, 21.3; 1882, 22.3; 1883, 22.9; 1884, 22.7; 1885, 23.2; 1886, 24.1; 1887, 23.2; 1888, 23.9; average, 22.89.

Thus we find the relations exactly as we expected to find them. In Italy, where, at least as far as I know, nasal diseases are less frequent than in France, out of 1,000 conscripts 16.61 are rejected on account of hernia; in France, on the contrary, 22.89. As these data furnish another proof for our theory, I could not omit bringing them in addition.

As you are perhaps aware, I furthermore tried to prove that where *nasal diseases decrease, the number of ruptures must also be diminished*. I based my statements especially on the results of the excellent investigations of Bryson-Delavan (*N. Y. Med. Journal*, November 12, 1887), who, in accordance with the experience of Zuckerkandl, E. C. Morgan, F. Donaldson, Jr., J. N. Mackenzie and others, has proven that among primitive types deformities of the septum are very rare. On the other hand I showed that these races, at the same time, have but very rarely a hernia, and I called attention to the report of the Provost Marshal-General, that none of the 121 Indians drafted in the last war had a hernia,

and none nasal trouble. These conclusions were, according to my knowledge, opposed by nobody.

Not quite the same happened as to the third question at issue. I finally tried to show that just those people are especially prone to hernia who are least exposed to inclement weather, leading a sedentary life, and who surely have not to carry or to lift heavy burdens. In support of my affirmation I then cited the report of the Provost Marshal-General again (Statistics, Med. and Anthropological, of the Pr. M. Gen.'s Bureau, etc., by J. H. Baxter, Washington, 1875).

In this report we have a tabulated statement of the frequency with which hernia occurs among men engaged in seventy-five varieties of occupations. The smallest percentage is found among soldiers, namely 28.8 per 1,000. Next to them come the tanners and curriers, coppersmiths, students, iron-workers, etc. The latter (iron-workers) show the very interesting number 32, while inn keepers, whose occupation, in proportion to these, can be called an extremely easy one, reach the highest point, namely 101.5 per 1,000. To the same category belong editors, engravers and others, whose percentages range from 95 to 98 per 1,000, and who are by no means as much strained physically as soldiers, coppersmiths, sailors and the like. Tanners and curriers show the number 29.4, while teachers have almost twice the number, viz: 56.6; and dentists, who remain indoors almost the whole day, show even 79. From these data I thought myself correct in drawing the conclusion that people who, through some special kind of occupation, are apt to acquire a post-nasal catarrh, or other diseases of the upper air-tract, are more subject to hernia than others.

To this Dr. Schapringer, in a review published in the *Monatsschr. f. Ohrenheilkunde*, Jan., 1889, replied that people suffering from hernia at the time of selection of their trade never elected to become smiths or the like, but rather engravers, etc. It would, therefore, be the hernia that created the engraver, and not vice versa, the business of an engraver that produced a hernia. Dr. Schapringer, furthermore, thinks that the above tables are of a doubtful value as long as they do not contain details about the first appearance of the herniæ. Now, gentlemen, I can not fulfil his desire, nor do I even think it necessary, as we have statistics about the time of the first appearance of a hernia in great abundance.

According to consonant investigations made by the most prominent writers on this subject (Malgaigne, Cloquet, Kingdon, Wernher, Albert, etc.), it is stated that in males hernia occurs most frequently between the thirtieth and fortieth years of life. What does this fact mean? It teaches us the following: A young man, after having chosen his occupation, which, as a rule, takes place in his twentieth year, or even before that time, and after having followed this occupa-

tion say for ten years, certainly shows by this time the primary effects of such occupation. A soldier, a coppersmith or an iron-worker will have developed his whole muscular system completely by this time—he will rarely show a tendency to catarrh; hence a greater rarity of herniæ. A tailor or an engraver, on the other hand, you will be able to recognize easily from the debility of his constitution. *He has* already, especially in a climate favorable to it, a post-nasal catarrh, hypertrophied mucous membranes in the nose, etc., etc.; and he has *also*, in a proportion by far surpassing the other occupations, hernia. We see, therefore, that it is the occupation which creates the hernia, and not vice versa.

Allow me to mention briefly two more facts in corroboration of this. I have before demonstrated that from the soldiers of the German army, in spite of their hard physical training, the average of those rejected for hernia is not more per year and per 1,000 than 1.05. As I, however, know now—my tables, I am sorry to say, are not so complete as to be published—the proportion is such, that with the increasing age of service the frequency of hernia decreases. Thus we see that bodily straining, gymnastics, out-of-door exercises, etc., can be considered as the *best prophylactics against herniæ*.

It was, furthermore, said that in mountainous regions ruptures are more common than in low countries, and this supposition was based on the belief that the labor in ascending the mountains must increase their frequency. The only author whom I am able to cite on this subject is no less an authority than Malgaigne. According to his statements, however, in France the reverse is the case, since just in the mountainous parts ruptures are infrequent, while they are quite common on large plains and *on the shores of the rivers*. We see, therefore, that just where the humidity of the climate is able to cause many nasal troubles, again the herniæ are increased in frequency.

According to my personal experience, which, however, was not exactly directed to this question, I can only say that I have seldom seen so few herniæ as I met while in mountainous regions.

Another question to which I would allude is this: How is it that herniæ are more common in males than in females? The explanation which I have to offer is that while the intra-abdominal pressure is increased in men and women by coughing, the efforts are more violently performed in the case of the former.

In view of all these proofs which I advanced, I hope you will find some truth in my theory, and I shall not try your patience with enumerating a number of less important facts which are in favor of this theory. In concluding my paper, which I have read upon the kind invitation of your Secretary, allow me only to collate the results of my observations up to date:

1. Of 500 ruptured, *ad hoc*, examined by me (*Monatsschr. f. Ohrenheilk.*, November, 1887, f. f.) there were found 143 with strong diseases of the upper air-passages that made surgical interference absolutely necessary.

2. Among about eighty members of a family also examined by me (*loc. cit.*), almost all had diseases of the upper air-tract, and one-third had herniæ.

3. Where nasal diseases are less frequent, there, as we have seen, also less herniæ are found (see Indians).

4. According to the frequency of diseases of the upper air-passages, hernia was found, of each 1,000 conscripts in the United States, in 50; in France, in 22.89; in Italy, in 16.61; in Austro-Hungary, in 14.09, and in Germany probably in even less than 14 per 1,000.

5. Hard physical work, ascending mountains, lifting of heavy loads, etc., never give the *pre-disposition* to herniæ; but, on the contrary, such occupations which involve diseases of the upper air-passages.

6. In women herniæ are rarer than in men, on account of the weaker stress used in pressing down the intra-abdominal contents during the act of hawking, clearing the throat, and the like.

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DIAGNOSIS AND TREATMENT OF ABSCESS OF THE ANTRUM.

Read before the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, at Newport, June, 1889.

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The antrum is that triangular-shaped cavity in the superior maxilla, sometimes found extending into the malar bone forming a second cavity. It is lined by mucous membrane continuous with that of the nose, and it is occasionally thrown into folds forming partial septa, a fact of considerable clinical importance. It varies in size according to the age and sex of the individual, being small in children, and larger in the male than in the female. It diminishes in size in old age and after the loss of the teeth.

Of the surgical affections of the antrum, suppurative inflammations play the most important part. Until within recent years abscess of the antrum was regarded as rather an uncommon affection, but we now know that it exists much more frequently than was formerly supposed. It occurs generally after the second dentition; although there is one case recorded by P. B. Pedley,¹ of a girl 8 years of age, where the abscess was due to caries of a temporary canine tooth.

Among the causes of abscess of the antrum may be enumerated: 1. traumatism; 2. the acute

infectious diseases, such as measles scarlet fever and smallpox; 3. syphilis; 4. an extension of the inflammation from the lining membrane of the nose; 5. extension of the inflammatory process from the suppurating pulp of a tooth resulting from dental caries. Authorities differ as to the most common of these causes. Zuckerkandle, for example, believes that it is more often due to an extension of the inflammation from the nose; while others regard disease of the teeth the principal factor in the etiology. I am of the opinion that the form of inflammation of the antrum characterized by a sero-mucous secretion, and known as *hydrops antri*, is the result of an extension of a catarrhal inflammation of the nose. On the other hand, that form which is more chronic in character, and is accompanied by a mucopurulent secretion, is the result of an extension from the teeth.

The under surface of the antrum is separated from the alveolar process by a thin lamella of bone, which is formed with the development of the permanent teeth; occasionally, however, it is absent, and the roots of the teeth are then likely to extend into the antral cavity. Its floor is in close relation to the roots of the first and second molar teeth; and when the cavity is unusually developed the roots of the first and second bicuspid teeth are brought in contact with it. Lying in such close proximity to the floor of the maxillary sinus, the teeth when diseased are likely to transmit the septic process there, and set up a suppurative inflammation.

The symptoms of this affection vary with the intensity of the inflammation. In a few cases there is distension of the walls of the superior maxilla and swelling of the cheek of the affected side; pain in the infra-orbital region, and at the inner angle of the orbit; tenderness on pressure over the canine fossa, and occasionally a crepitating sensation imparted to the fingers, due to a springing of the distended walls of the antrum; a narrowing of the field of vision, due to pressure on the floor of the orbit, a symptom, according to Ziem, much more frequently associated with affections of the ethmoid cells, and a valuable point in the differential diagnosis between abscess of the antrum and of the ethmoid cells. In some cases there is a discharge of fetid pus from the nose, generally unilateral and of long standing. Long continued secretions of pus from the nose, especially when confined to one side and associated with caries of the molar teeth, should always direct our attention to the antrum as the source of the trouble. A suppurative inflammation of the nose is an extremely rare affection. Stoerk has described such a disease, occurring as an epidemic among the Gallician Jews.² It may, however, occur from infection, as for example, from gonorrhœal poison.

¹ *Lancet*, Feb. 16, 1889.

² *Krankheiten des Kehlkopfes*, p. 161.

There are four possibilities, after eliminating wounds, and inflammations following the acute exanthemata that may give rise to pus in the nasal chambers: 1. foreign bodies, including nasal polypi; 2. diseases of the bones; 3. secretion of pus from the antrum of Highmore; 4. secretion of pus from the frontal sinus and from the anterior ethmoid cells. The secretions from the anterior ethmoidal cells may enter the middle meatus, along with those from the frontal sinus, through the infundibulum, while the secretions from the posterior cells find their way into the pharynx along with those from the sphenoidal sinus.

If the pus should continue to flow after the removal of the polypi, or foreign body, we are then likely to have either an abscess of the maxillary sinus, of the frontal sinus, or of the ethmoid cells. Occasionally it is difficult to differentiate between these, for in each case pus is found in the middle meatus extending along the inferior border of the middle turbinated bone. When this body is sufficiently contracted, which can be accomplished by an application of a 20 per cent. solution of cocaine, the middle meatus will be brought into full view, and pus found in the hiatus semi-lunaris. If it is not possible to bring about the contraction of this body by cocaine, then the hypertrophied or swollen tissue should be destroyed by means of the cautery, or chromic acid. The opening of the frontal sinus will be found just below and in front of the ostium maxillare in a funnel-shaped depression—the infundibulum. Owing to the close proximity of these two openings it is very difficult to discover from which the pus flows. Hartmann, of Berlin, has suggested the following device to ascertain the source of the secretions: After drying the parts thoroughly with absorbent cotton, he drives a blast of air through the affected nostril by means of a Politzer air-bag. By this procedure he claims to be able to aspirate the pus from the sinus and thus discover its source. Another point in the differential diagnosis is that abscess of the maxillary sinus is of comparatively frequent occurrence, while that of the frontal sinus is rare.

The most positive means of differentiating between these two affections, is by making an exploratory puncture, as suggested by Moritz Schmidt.³ He places a small pledget of cotton saturated with a 20 per cent. solution of cocaine under the inferior turbinated body, about its middle, and allows it to remain in until the parts are thoroughly anæsthetized; then raising the end of the turbinal body, he pierces the thin wall of the antrum with a sharp-pointed and curved syringe. The point of the instrument should be not too fine, so that it will bend or break when making the puncture. There is no pain following the operation and it is entirely devoid of danger. This

little instrument should be employed in all doubtful cases, and its use will, I think, tend to prove that the affection is much more common than is generally supposed. The indications for treatment are to let out the pus and drain and disinfect the cavity until the inflammation subsides. If the abscess should point anywhere it should be evacuated at that place.

A great deal has been written recently with regard to the surgical treatment of these cases, and it is interesting to note the tendency on the part of modern surgeons to deviate from the well-tried practice that has stood for nearly a century, and to return to the original suggestion of John Hunter, and the practice of Jourdain—to evacuate these abscesses through the nose.

For nearly a century the practice has been to enter the antrum from the mouth. The operation that has met with the most favor is that known as Cooper's—through the alveolar process. In case a molar tooth is present it should be extracted and the opening enlarged; or if, as frequently happens, the tooth has been extracted at some previous time, the alveolar process should be perforated at that point. This is best done by means of a small trephine, attached to a surgical engine, or to the electric motor. The instrument should be directed slightly forwards and inwards. This operation has the advantage: 1. that of draining the antrum at its most dependent part, and that the cavity can be readily cleansed by syringing; 2. that it can be performed without the aid of an anæsthetic—a few drops of a 4 per cent. solution of cocaine injected into the gum being sufficient to completely anæsthetize the parts. Its disadvantages are: 1. the liability of food and bacteria from the mouth to enter the sinus and assist in keeping up the suppuration; 2. the occasional necessity of extracting a sound tooth.

If the front wall of the antrum should bulge forward in the canine fossa, then the operation known as Desault's should be performed—resecting a small piece of bone from the fossa. Other surgeons have opened the antrum through this fossa by means of a trocar, and Fergusson recommended an ordinary carpenter's gimlet.

Another operation through the mouth is that devised by Bertrandi, who opened the antrum through the hard palate, when a slight bulging of that bone showed a tendency on the part of the abscess to open at that point.

Hartmann, of Berlin, revived, in 1884, a method proposed by Jourdain in the early part of the present century, of washing out and disinfecting the antrum through its natural opening, the ostium maxillare, in the middle meatus. This procedure is also recommended by Stoerk, and they claim to have cured a number of cases in this way. The disadvantages of this procedure are great and the results so uncertain that it will never be

³ Berl. Klin. Wchschr., Dec. 10, 1888.

generally used; for the antral opening in the middle meatus is situated so far above the floor of that cavity that it cannot be thoroughly drained, and it would be impossible to wash out through a tube of small calibre the thick colloid secretions that are so often found in these abscesses.

The antrum is a pneumatic extension of the nasal chamber and communicates normally with it. When for any reason this communication is shut off the operation that would restore its natural condition would seem the most rational one to select. Jourdain opened this sinus through the infundibulum, in the middle meatus; but this operation never became popular, because, owing to the high situation of the point selected for making the opening, it was difficult to perform it. It is, moreover, not unattended with danger, owing to the possibility of wounding the floor of the orbit.

Mikulicz advises that the antrum be opened through the lateral wall of the nose at a point where it is thin and easily perforated.⁴ He uses a special instrument for the purpose, which consists of a sharp, double-cutting knife attached to a handle bent at a blunt angle. It has a flange, so as to prevent its being shoved in too deep. The parts having been thoroughly anesthetized with cocaine, the instrument is passed into the nose, and when about the middle of the inferior meatus, it is turned outward and by firm pressure is made to penetrate the thin wall of the sinus. By a to and fro movement the opening can be made as large as desired.

This operation has the advantage of draining the cavity at its floor, and the opening being easily accessible it can be readily syringed out; the secretions pass through the nose, instead of into the mouth, and there is little danger of the entrance of foreign particles into the antrum to keep up the suppuration. This operation is, however, not practicable: 1. when the nasal chambers are of abnormally small calibre; 2. when there is a deflected septum; and 3. when there is marked hypertrophy of the inferior turbinated body. The principal disadvantage of the operation is that it leaves a ragged edge in the wall of the antrum, against the margins of which the nasal secretions are caught, and becoming dried and hardened may cause an ulceration when an attempt is made to remove them.

The local treatment is very important, the successful issue of the case depending largely upon the solutions used, and the care with which they are applied. The cavity should be irrigated or syringed gently with mild disinfecting and stimulating lotions daily until all suppuration has ceased, when the main opening may then be allowed to close.

The fetor that almost invariably accompanies

these conditions is best overcome by means of a solution of permanganate of potash, after which the cavity should be syringed with a weak solution of common salt and carbolic acid. If the solutions are applied through an opening in the alveolar process, great care should be exercised not to drive them too forcibly against the roof of the cavity, for by so doing distressing pain may be produced in the eye.

This treatment will, in many cases, be all that is required; but in the more obstinate forms of inflammation the local application of the peroxide of hydrogen will be found very efficacious; or, better still, glycozone, a mixture of the peroxide of hydrogen and glycerine. In this preparation we have the combined effect of the glycerine, which abstracts water from the lining membrane of the cavity and keeps it constantly flushed, and the peroxide, which destroys its septic contents and, at the same time, stimulates the inflamed membrane to healthy action. The following are notes of four interesting and instructive cases that have come under my observation:

Case 1.—Mrs. E. presented herself for treatment March 3, 1887, giving the following history: She has had frequent attacks of coryza, and for a number of years has suffered from hay fever. Two years ago she had considerable trouble with the second molar tooth in the upper jaw on the left side, which the dentist broke in attempting to remove it, leaving the roots in the gum, and they, from time to time, have caused her pain. About a week prior to consulting me she caught a severe cold at a funeral; since then she has suffered intense pain in the face and in the ear; for several days there has been a watery discharge from the nose. Examination: The left side of the face is very much swollen, and there is some distention of the anterior wall of the superior maxilla; pressure upon the affected side of the face is very painful and gives a crepitating sensation to the fingers; the nose is tightly blocked on the left side, the right side partly open: the first and second bicuspid teeth are absent on the left side, the roots of the second molar remaining and deeply imbedded in the gum; the remaining teeth are in good condition; secretions from the nose are watery in character; examination of the left ear shows a small fistulous opening in external auditory canal just under the annulus tympanicus, about midway of its anterior inferior quadrant, but having no connection with the middle ear: mt. normal in color; hd. $\frac{3}{4}$.

On March 4th I perforated the antrum through the canine fossa by means of an ordinary trocar and inserted a Knapps mastoid drainage tube, small size. There was a profuse muco-purulent flow following the operation. The cavity was washed out with a warm solution of common salt and carbolic acid. After the third syringful had

⁴ Archiv. für Klin. Chir., Berl., xxiv, 626.

been injected the solution passed out of the nose. There was little or no odor present. This treatment was pursued daily for ten days, when the secretions ceased entirely. The drainage tube caused some irritation in the cellular tissue of the cheek, and was removed at the end of the seventh day. Two days after the operation the nose opened on both sides, so that a rhinoscopic examination could be made. The mucous membrane of the left side was deeply congested and very sensitive, the mildest applications causing paroxysms of sneezing. There was also an ulceration of the septum about the size of a silver three-cent piece, laying bare the cartilage. By the use of detergent sprays the inflammatory condition subsided, and the application of a solution of nitrate of silver (gr. v, ad. $\bar{3}$ j) to the ulcer caused it to heal, completely covering the cartilage.

Case 2.—Mr. —, U. S. N., presented himself in the spring of 1888, complaining of a nasopharyngeal catarrh of long standing, and stated that he was sceptical as regards a cure. He complained principally of a profuse secretion of the nose, and when in the reclining position the secretions dropped into his throat, causing him great annoyance.

On examination the inferior turbinals on both sides were markedly hypertrophied, so much so that no satisfactory examination of the upper part of the nasal chambers could be made. The septum was slightly deviated to the left in its upper part. The vault of the pharynx was bathed with a white secretion, but there was no swelling or hypertrophy in this region. The hypertrophied tissue was reduced on both sides by means of the galvano-cautery and chromic acid. The left middle turbinal body was then found enlarged, leaving only a fissure between it and the deflected septum. Pus was found in this fissure and in the middle meatus, reappearing as soon as it was wiped away with absorbent cotton.

Upon further inquiry he stated that in 1867 he had some trouble with the second molar tooth in the upper jaw on the left side. The nerve was killed and the tooth filled without removing the dead pulp. After suffering for two years with frequent small abscesses around the tooth the filling and the decomposed tissue were removed. He dates the nasal discharge from six months after the first filling was put in. He has never had any pain in the face, but it is somewhat fuller on the affected side. The nasal discharge has been constant and very annoying.

Being unable to decide whether there was an abscess of the ethmoid cells, complicating the antral condition, the case was referred to Prof. Harrison Allen, who diagnosed an abscess of the maxillary sinus. At this point my relations to the case terminated, for he was transferred to his

attending physician, Dr. Rixey, U. S. N., through whose courtesy I am allowed to continue the report of the case.

The second molar tooth was extracted and found badly ulcerated at its roots, the opening in the alveolar process was enlarged and the cavity syringed with warm, disinfecting solutions, bringing away a great quantity of very fetid pus and mucus. The treatment has been carefully carried out under Dr. Rixey's direction with marked improvement in his condition. Although there is some secretion still, sufficient to require the cavity to be washed out once a day, he is comparatively comfortable. He wears a gold tube in the alveolar opening, covered by a plate, so as to prevent any of the secretions passing into the mouth.

Case 3.—Mrs. P., admitted Sept. 10, 1888, complaining of a fetid discharge into the mouth through an opening left by a recently extracted tooth. She gave the following history: For a number of years she has been afflicted with nasal catarrh, for which she received treatment from numerous physicians without any benefit. About three years ago the secretions from the left side of the nose became so profuse that her life has been a burden. She frequently complained of toothache, and a week ago she had the second molar tooth on the left side extracted. Since then the nasal secretions have greatly diminished, but a great quantity of foul pus is passing constantly into the mouth. She complains of constant nausea and loss of appetite, and is obliged to mop the gums constantly, so as not to swallow the pus. There has never been any swelling of the face, and the patient does not recall having had any tenderness on that side of the face. Present condition: She has an anxious expression; complexion sallow; tongue furred; pus was observed flowing freely from the opening in the gum; a probe passed readily into the antrum; no swelling or pain on pressure on the affected side of face. Examination of the nose shows a collection of thin pus in the middle meatus along the lower border of the middle turbinal on the left side; the right side shows no abnormal condition.

The opening into the antrum was enlarged and the cavity syringed with a solution of permanganate of potash. Immediately there came from the left side of the nose a great quantity of fetid and dark green pus, partly fluid and some of thicker consistency. The odor was almost unbearable. The cavity was washed out daily with a solution of common salt and carbolic acid for nearly three weeks, when the discharge ceased entirely and the opening into the antrum was allowed to close.

Case 4.—Capt. —, U. S. A. First seen Feb. 1, 1889. Complained of nasal catarrh, from which he has been suffering for a number of

years. When a cadet at West Point the nerve of the left second molar tooth was killed. Two years later the tooth broke off and a piece of raw cotton was taken out of it in a very fetid condition. He never had any trouble with his nose prior to that time. There has always been more or less pain in the left side of the face since the tooth was filled. About two years ago the secretion of pus from the nose became very annoying, dropping back into the pharynx when he is in the reclining position.

Examination shows the left side of the face to be somewhat fuller than the right. There is a suffusion of the conjunctiva of the left eye which has existed for some time. The second molar tooth in the upper jaw on the affected side is absent; the other teeth are in good condition. There is a thin purulent secretion from the left side of the nose, which is most abundant in the middle meatus; it recurs rapidly after removal. The mucous membrane on the affected side of the nose deeply congested. The alveolar process was opened by means of a small trephine, 3 mm. in diameter, attached to a surgical engine, the gum having been previously anesthetized by the injection of a few drops of a 4 per cent. solution of cocaine. The cavity was readily reached, and it was then syringed out with a warm solution of bicarbonate of soda. A great quantity of fetid pus, mixed with a thick yellow colloid mucus, came out through the nose. There was some bleeding following the operation, but that soon ceased. The antrum was washed out daily for ten days with a solution of common salt and carbolic acid, when the odor ceased, but with little effect on the quantity of secretion of pus. The treatment was then changed to a solution of boracic acid, with no marked improvement following. One application of a solution of bichloride of mercury (1-2500) was made, but owing to the severe pain it caused it was not tried again. I then used a solution of the peroxide of hydrogen with some benefit, but as the improvement was not as rapid as could be desired I was advised to try glycozone. Each application was followed for several hours afterwards by a profuse watery discharge from the nose. The improvement, after the use of this application, was marked from the outset, and in ten days after its first application all suppuration had ceased, the opening in the alveolar process was allowed to close, and the patient was discharged cured.

My experience with glycozone is limited, and I can only judge of its efficacy in this one case; but it seems to me to possess advantages that we have long been in need of in treating these chronic abscesses of the maxillary sinus.

DR. J. O. ROE said: It is my opinion, based on my own experience, that abscess of the antrum is more often caused by diseases in the nose

than by diseases of the teeth. I can now recall eight cases of abscess of the antrum that have come under my care. In four of these cases the abscess was caused by, or associated with, nasal polypi, and there was no disease of the teeth. In three of the other cases the disease was associated with, and apparently caused by, dental caries. In two of the four cases associated with nasal polypi the abscess was not suspected before the polypi were removed, the fetid discharge being attributed to retained secretion that had become decomposed. In every case there was more or less nasal disease. In the study of these cases I concluded that the nasal difficulty had a marked influence in the production of the disease in the antrum; first by the irritation in the nose, causing a turgescence of the lining membrane of the interior of the antrum; secondly, by the direct extension of the disease from the nose into the antrum over the continuous surface, and thirdly, by closure of the nasal opening into the antrum by the disease in the nose, thereby causing a retention of the discharge excited by the congestion or disease in the antrum.

DR. LIPPINCOTT was under the impression that purulent disease of the antrum was frequently due to morbid conditions of the teeth. Abscess of the orbit not infrequently has for its *raison d'être* a suppuration process originating in the antrum; and in a large proportion of orbital abscesses arising in this way the primary cause has been dental caries.

DR. E. FLETCHER INGALS, of Chicago, had treated several cases of the kind. One had been cured after about three weeks' treatment, having been washed out repeatedly with peroxide of hydrogen through the normal opening into the nasal cavity. However, he had three cases under observation where every form of treatment had been inefficient in checking the purulent discharge. They had worn tubes in the alveolar process for periods of five, three and two years respectively, and in neither did there appear to be any dead bone, as the discharge was not offensive. He thought that an opening at least 8 mm. in diameter should be made, to allow the introduction of a tube and free discharge.

DR. DALY, of Pittsburg, President, said he had had some experience in the disease of the antrum referred to in the paper just read, and had written a paper upon a series of such cases, which he read before the American Laryngological Association some eight years ago. He was in the habit of opening the antrum through the alveolar process. A surgical engine is not necessary for this. He had once gone into the antrum through the socket of a tooth by means of a small bevel-pointed screw-driver belonging to a gun case. It ought to be borne in mind, however, that the operation is not without danger. One of the brightest men that has ever adorned the Ameri-

can medical profession died a day or two following an operation on his antrum—a man whose teachings have since become regarded as revelations made far in advance of his time and profession. I refer to the late Dr. Beard, of New York. The surgeon who operated on Dr. Beard gave me, shortly after, an account of the operation, which was done with his customary care and skill. The opening was large and made into the antrum by means of the dental engine. Within twenty-four hours after the patient had a chill and other symptoms of septic infection, and died, creating an irreparable loss to the medical profession. The after treatment is necessary to be continued with the utmost care and asepticism for a long time, and not among the least useful and efficient cleanser is one that is nearly always at the hand of the patient, wherever he may be. I refer to soap and water. The third case upon which I operated went to the far West after a few weeks' care, having with him a prescription for an antiseptic fluid which was ordered to be used several times a day. The patient lost the bottle, or broke it, and as a *dernier ressort* used soap and water, found it efficient and continued it until the discharge ceased at the end of six months. He has for eight years remained quite well.

DR. D. BRYSON DELAVAN, of New York, referred to a case of abscess of the antrum which had resisted a great variety of treatments at skillful hands, in which the application of the galvano-cautery to the mucous membrane of the middle turbinated body of the affected side was followed by marked temporary relief.

DR. BRYAN agreed with all that had been said, and further stated that the obstinacy of these cases was, he thought, largely due to incompletely washing out the cavity, leaving septic matter between the partial folds of mucous membrane, which is sufficient to start up the inflammation again after it had apparently subsided.

LITHOLAPAXY IN CHILDREN.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY DUDLEY P. ALLEN, M.D.,

VISITING SURGEON TO LAKESIDE HOSPITAL AND TO CHARITY HOSPITAL; CONSULTING SURGEON TO ST. ALEXIS' HOSPITAL, CLEVELAND, OHIO.

In accepting the invitation of our President to discuss before this body the subject of litholapaxy in children, I have felt no slight degree of hesitation. In the region of country where I reside—Cleveland, Ohio—stone in the bladder is of rare occurrence, so that no one surgeon secures a large number of cases for operation. However, having resided in the Massachusetts General Hospital, and having seen during three years the evolution of the operation of litholapaxy in the hands of

Henry J. Bigelow, and having followed it carefully abroad as performed by Guyon of Paris, Sir Henry Thompson of London, and other surgeons, and having added to this some experience of my own in operating upon children—I shall venture briefly to open this discussion, hoping to elicit from others opinions which will be of value to us all.

Though the operation of litholapaxy on children is a recent one, the success with which it has been performed must, beyond all question, place it among the established operations. Introduced into the Indore Hospital of India by Surg. Major Keegan, it had, according to the latest statistics which are within my reach, been performed by him and his associates in 114 cases, with four deaths. One of these deaths was of a patient with very advanced kidney disease, where operation was earnestly solicited only in the hope of securing relief from suffering. A second death resulted from three attempts to crush a calculus formed about a tilli stalk. Whether or no these two cases be deducted from the number of deaths, as perhaps they might be with fairness, the result is a brilliant one. To be sure, the last report of Surg. Major Freyer gives 165 successful consecutive lateral lithotomies on boys under 16 years of age; but he reports sixteen successful consecutive litholapaxies, and favors the operation in suitable cases. To employ this operation to the exclusion of all others would of course be an error. There are, however, many cases in which it is especially adapted. To point out these cases, and the elements of importance belonging to the operation, is the object of this paper. In doing this we will compare litholapaxy with lateral, median and suprapubic lithotomy.

In comparing litholapaxy to lateral lithotomy it must of course be acknowledged that Freyer's 165 successful consecutive operations upon boys is a more brilliant record than that obtained by any other method. These figures represent, however, the result of vast experience, and are, so far as we know, the best ever obtained. It is not at all impossible that time and experience may yield similar success to litholapaxy.

The removal of large stones from boys by lateral lithotomy is associated with dangers of bruising, hæmorrhage, and possible injury to the reproductive apparatus. Too great size is also a bar to litholapaxy in children, on account of the difficulty in removing the fragments of the crushed stone through the necessarily small evacuating tube. It is in these cases of large calculi that the suprapubic operation has its advantages, as well as in cases of diseased bladder or encysted stones.

In case of small stone, median lithotomy is an excellent operation, and is a formidable rival to litholapaxy in the field to which the latter is especially adapted. In this connection a letter

which I have recently received from Dr. J. G. Kerr, of Canton, China, may be of interest. I take especial pleasure in reading his letter before this body, on account of the admirable work done by this missionary physician in operating on calculi—some account of which was recently published in this country. He writes: "I have not practiced litholapaxy in children. In most of the cases I meet with in boys, the stones are large, and I would be disposed to crush only in cases where the stone was very small. I would prefer the operation I practice, and have performed in many cases, simple incision of the membranous urethra, and extraction of the stone with a small pair of forceps, dilating slightly the opening in the bladder. The operation is simply an incision into the urethra and as devoid of danger as any operation for stone can be. My experience in lithotomy, lithotripsy and litholapaxy amounts to between 700 and 800 operations, etc." I omit the remainder of the letter for lack of time, but surely the opinion of a surgeon of so great experience and recognized ability must weigh strongly in favor of the operation of median lithotomy for small calculi in boys.

Before speaking of the advantages peculiar to litholapaxy as compared with suprapubic lithotomy, I think you will be interested to hear a letter which I have received from Professor Frederick Petersen, of Kiel, Germany, under date of June 3. As you all know, he is the originator of the operation of suprapubic lithotomy as at present performed, an operation which has secured such brilliant results as to entitle him to the admiration of all surgeons and the thanks of humanity. His letter, translated, is as follows: "With litholapaxy in children I have no experience, since I always do the cutting operation, and in difficult cases give the suprapubic operation the preference. When possible after removal of the stone, I unite the bladder with a double line of catgut sutures. The upper portion of the incision in the abdominal wall is united by sutures of silkworm gut. Through the lower portion of the abdominal incision are placed superficial and deep silkworm gut sutures, but these are not tied. This lower portion of the wound is tamponed with iodoform gauze, which remains three days, when it is removed and the sutures are tied—thus fully closing the wound. No catheter is placed in the bladder, but the patient is permitted to pass his water if he is able to do so; otherwise it is drawn off by a catheter as required. *Mit der Litholapaxie kann ich mich noch immer nicht befreunden.*"

Agreeing then, as all must, that there is much in favor of the various cutting operations, and that there are cases suited to each of these methods, let us compare them with litholapaxy. One advantage of litholapaxy over other operations is that it is not a cutting operation. Of course, from the standpoint of good surgery, this should weigh

little in its favor. This much, however, is true: There is no small proportion of cases in which an operation where cutting is required will be long delayed; whereas, should the public understand that calculi can be removed without cutting they will bring to the surgeon at a much earlier period children suffering with stone, and thus render its removal more easy, whatever plan may be adopted. Cutting operations, however, have another and greater disadvantage. Thus far, union of the bladder by first intention after cutting has been rare, by any method save the suprapubic, and in this operation it is not the rule. Though the drainage of the bladder may have its advantages in securing a healthier condition of that viscus, it has the very serious disadvantage of soiling the patient's bed, rendering him very offensive for a longer or shorter period and, when the bladder fails to heal for a considerable time, as is not infrequently the case, resulting in sores that are painful and troublesome. The difference in comfort to the patient, and the time he is confined to the hospital, is also considerable. The average number of days spent in the hospital in Keegan's cases of litholapaxy was 5.7. The average which he gives after lithotomy was 17.61. The average days in hospital of Freyer's cases after litholapaxy was 6.12. We are unable to give a sufficiently large number of cases of suprapubic lithotomy, performed by any one operator on children, to establish any reliable percentage as to time, and it is evidently unfair to this operation to judge it by statistics gathered from various sources. Though a certain percentage of cases heal by first intention, I think it is beyond all question that up to the present time no operation for stone confines patients to their beds for so short a time as litholapaxy. In many cases after litholapaxy in children, the patients are free from all discomfort on the third day, and are up and around. Litholapaxy cannot in any way injure the reproductive apparatus, but very likely the danger of this resulting from lateral lithotomy has been overestimated.

The advantage gained by ability to see the interior of the bladder, as is done in suprapubic lithotomy, is urged in favor of that operation. It is to be remembered, however, that the bladders of boys are, as a rule, in a more healthy condition than those of adults, and that encysted stones are uncommon, so there is rarely any necessity of seeing the interior of the bladder. It has been objected, too, that stones recur more frequently after litholapaxy than after cutting. However, Keegan says that of his 114 cases operated between 1881 and 1886, not a single one has returned so far as he knows, and he adds that had there been a recurrence of the stone it is quite probable that his patients would have returned to him.

A case of my own, bearing on this point, may

not be out of place. A boy was cut for stone in March, 1884, and again in April, 1886. In about one year after the second operation the boy began again to suffer from symptoms of stone, and in February, 1888, I performed litholapaxy. The boy's sufferings had been terrible, vesical tenesmus being frequent, and so severe as to cause his cries to be heard all over the neighborhood. The boy slept very little, and I have rarely seen a patient in a more pitiable condition. Since the performance of litholapaxy the patient's relief has been complete. Should there be any return of the calculus there certainly will not be the hesitation to undergo another operation for crushing that there was in the case of cutting. The success of this case may have been due to the after-treatment. After recovery from the operation I washed out the bladder twice each week during nearly two months with a solution of *argenti nitratis*, varying from $\frac{1}{2}$ to 1 gr. to water *ssiv*. This is, I am convinced, a wise plan of treatment, and has resulted in this case much more successfully than did the previous cutting operations. It seems to me as reasonable to treat a bladder with cystitis by washing it out, after litholapaxy, as thus to treat cystitis from any other cause, and I fully believe that by this method all the advantages can be gained that are now claimed for drainage after lithotomy, without the accompanying disagreeable features of bad smells, a filthy bed and irritated skin.

One great difficulty in litholapaxy is the small size of the instruments which must be used. These are larger than would be supposed possible. There are, however, variations in the size of the urethra in different boys. Boys from 7 to 8 years usually admit a 10 to 11, English scale. Some cases occur, however, where even after incising the meatus, the urethra is so small that suitable instruments cannot be inserted. Obviously in these cases lithotomy is the proper operation.

As to whether hard or large stones should be crushed is a question. Certainly there are limitations in both these directions. Though a stone can be measured as to size with some degree of accuracy, still all who have performed litholapaxy have found stones which gave the same measurement by the lithotrite vary greatly in weight and volume. This is easily explicable in consideration of the different diameters by which a stone may be seized. Concerning the density of a stone, it can hardly be possible to form any definite idea of many calculi, until the operation of crushing has begun. It is not rare to seize a stone with a lithotrite, and feel the blades of the lithotrite sink into the stone, and then come upon a hard centre, which is crushed with much greater difficulty. Were one to find a large and very hard stone, it would doubtless be well to abandon litholapaxy, and perform lithotomy—and the size of stone upon which an operator may venture must

be measured somewhat by his experience and dexterity.

Before considering the technique of the operation, we may quote from a letter from Mr. G. Buckston Brown, for many years associated with Sir Henry Thompson, and himself a surgeon of large experience in operations on stone. Under date of May 26, he writes: "I respond with pleasure to your request. I was, I believe, the first publicly to draw attention in our London medical press to the excellent work done by Surg. Maj. Keegan of India, the pioneer of lithotripsy in children. I think I cannot do better than enclose you an extract from my article on the choice of operation." . . . "Now, however, that lithotripsy at one sitting—by which is meant the crushing and complete evacuation of the calculus at a single operation—is accepted as yielding in the adult far better results than the older or many sittings method, it is not unlikely that the single sitting operation may prove superior even to lithotomy in children, for if efficiently carried out, lithotripsy will no longer be open to the objections formerly urged against it. . . . The surgeon may, therefore, choose for himself between lithotomy and lithotripsy if called to operate upon a boy; but if inexperienced in lithotripsy, he will perhaps do well to decide in favor of the former."

We will now consider the operation itself, and first as to instruments. Their size must vary with the case to be operated upon, ranging from 6 or 7 to 10, English scale, and, as has already been stated, the age of the boy is not a sure indication as to the size of the urethra—since in young children it is sometimes quite capacious. With instruments of so small size the importance of having them of the most reliable manufacture will at once be apparent.

Since it is desirable to use a lithotrite as large as can safely be inserted, it is imperative that its size should not be increased before withdrawal; consequently, provision must be made against impaction. Were impaction of the blades with debris to occur, serious damage might result in their withdrawal. On this account it is found best to construct the lithotrite so that the male blade shuts into the fully fenestrated female blade, rendering impaction impossible. This complete fenestration of the female blade has one disadvantage in my experience, viz.: in crushing a hard stone, pieces which are too large to pass through the small evacuating tube may be repeatedly pushed through the fenestrated female blade without being crushed. When this difficulty has arisen, I have overcome it by inserting a small lithotrite with a flat unfenestrated female blade, having no fear of impaction in crushing the few small pieces which may remain. With a few motions of this lithotrite, I have accomplished what I had failed to do after working with the completely fenestrated blade for a considerable time.

The small size of the evacuating tube shows the necessity of finely crushing the stone, and it is desirable that this be done with as few insertions of the lithotrite as possible. Frequent withdrawal of the lithotrite may cause congestion and swelling of the mucous membrane of the urethra, and consequent difficulty and danger in the insertion of instruments. A recent letter from Guyon of Paris may be of interest as bearing on the question of crushing. He writes: "Calculi are very rare in our country among children, especially those of the better class. My hospital service is one of adults; consequently I have performed lithotripsy only twice on children under 5 years of age. One of these patients had a very small stone; the second had a stone which measured 3 centimeters. Lithotripsy gave an excellent result. I am a strong advocate of lithotripsy among children, but only of lithotripsy at one sitting. Not to empty the bladder completely of fragments, but to leave them, is a gross surgical error. There are but the two methods—either lithotomy or lithotripsy at a single sitting. I find, however, the term litholapaxy a misnomer. It supposes the aspiration of the fragments to be the chief rôle. It is the crushing which is the chief rôle, and lithotripsy is the important thing. I am a strong advocate of aspiration, but this is only a complement, a grand perfecting of the operation to be sure, but it is not the operation, and as a result one does not perform litholapaxy, but lithotripsy. It is thorough crushing which renders possible successful evacuation, and this is especially true with children, since with them one cannot employ large tubes for the evacuation of the fragments." Standing as Guyon does, one of the first surgeons of the world in the line of genito-urinary surgery, his opinions are entitled to much consideration.

As in adults, so in children, the facility with which a stone is crushed depends largely upon its density. I show you here specimens of both hard and soft stones which I have removed from children by litholapaxy, and I have found that a small hard stone requires far more time in crushing than a soft stone of much larger size.

In withdrawing an evacuating tube it is important to bear in mind the possibility of a fragment of stone being caught in the eye of the tube. To draw this through the urethra of a child might cause serious damage—as well as to lose a fragment in the urethra.

The narrow size of the meatus in many cases renders its incision desirable, since less damage is done by its incision than by forcing instruments through it. All manipulations in the child's bladder require the greatest delicacy, and the dexterity and care of the operator will undoubtedly influence greatly the success of his operations.

I show you here two lithotrites, the long one made by Codman & Shurtleff, of Boston, with a Bigelow lock; the short one made by Wies, of

London, with the old lock. Without question the small instrument has its advantages in being lighter, more easily manipulated, and perhaps less likely to do damage by prying upon the neck of the bladder while working. The Bigelow lock is, however, vastly superior to the other, since the same movement with the right hand which locks the instrument begins the crushing and decreases greatly the liability of losing the stone from between the blades.

So far as difficulties of operations in children as compared with adults are concerned—though the operation requires much dexterity and, on account of the size of the instruments, is perhaps more difficult, on the other hand the bladder is less frequently in a seriously diseased condition. There are no enlarged prostates, pockets or projecting bands to give trouble; diseased kidneys are less frequently a complication, and the recuperative power of children is greater than in adults.

To summarize, then, we would say that beyond question the operation of litholapaxy in children is one which must be recognized. It is particularly suited to medium and small-sized stones, and though median and lateral lithotomy are very successful in such cases, we believe litholapaxy will be equally so in skilled hands, and that, beside safety, it has the great advantage of absence of cutting and of the filthy condition of the patient. Suffering is commonly very slight and is confined to a few days, and it is not infrequent for patients to be up and around on the third or fourth day. Patients will not hesitate so long before the crushing as the cutting operation, and should the return of the stone be more frequent after crushing than after cutting—as is by no means shown to be the case—a second operation will be more easily performed than the first, on account of the size of the urethra increasing with the age of the patient. The condition of a boy's bladder is certainly more likely to be favorable to litholapaxy than that of an adult.

Our idea would be that large and hard stones should be removed by the suprapubic operation, especially if for any reason it is desirable to see the interior of the bladder. Medium and small stones are favorable for removal by litholapaxy, unless for some reason the urethra be smaller than normal. The operation of median lithotomy is a favorable one in cases with small stones, but an operator skilled in litholapaxy would do well to choose the latter.

In cases of medium-sized stone, with a urethra not sufficiently large for the introduction of proper instruments for crushing, lateral lithotomy is indicated.

DR. R. P. HARRIS, of Philadelphia, has been elected an honorary member of the American Gynecological Society.

MEDICAL PROGRESS.

TREATMENT OF PULMONARY PHTHISIS.—At a special meeting of the Allegheny County Medical Society, held August 20, 1889, DR. LANGE reported a new method for the treatment of pulmonary phthisis. We quote from him as follows: The method consists of the inhalation of vaporized mercury and iodine. Of the results of this method I have nothing to say. I cannot forget that grass has not yet grown upon the grave of gaseous enemata, and I am aware that many men, many years and many cases are required to produce evidence of the usefulness of any remedy or method in the treatment of anything, even when the remedy or method possesses usefulness. I report this method because I desire co-workers.

It suggested itself to me that vaporized mercury, if brought into more or less direct contact with the bacillus of Koch, might destroy this, and that iodine, if applied directly to the ulcerating surfaces of lung tissue might effect a more powerful beneficial action than that resulting from its ordinary method of administration. I have had, and still have, the valuable assistance of Dr. Tingley in the preparation of apparatus and in devising ways and means by which these vapors may be satisfactorily administered to patients. This has presented many difficulties. A principal one is, that I know of no manner as yet by which a definite, a known quantity can be given. The vaporized mercury salts are resublimed and deposited upon the cooler parts of the apparatus. This is particularly true of the inhaling tube, which is always the coolest part of the apparatus. The consequence of this is that patients receive always an unmeasured, an accidental quantity of these salts or vapors, and not a quantity which is measured or known. To this fact are due two accidents, namely, that one very feeble patient was violently purged, and another was salivated. However, we hope to overcome this defect of apparatus and to be able soon to give patients exact quantities of these salts. The desideratum is an inhaling tube which will bear the temperature necessary to hold the mercury salts vaporized up to the lips of the patient, and which at the same time shall be flexible. Flexibility is almost a necessity; a feeble patient cannot breathe deeply and persistently from a stiff tube, a glass tube such as I now use.

I have found that the only salts of mercury available for this purpose are the red oxide and calomel. All others are reduced before being volatilized. I began with the iodide of mercury. This and all others when used result in the vapor of metallic mercury only. I have found no objection, however, to the use of metallic mercury, only it is to be noted that when other salts than calomel and the red oxide are used, the patient receives the vapor of metallic mercury.

Can the vapor of mercury, or anything inhaled, reach the bacilli in a tuberculous lung? Those bacilli, which are in consolidations, provided such consolidation is connected with a pervious bronchial tube, those in lung cavities furnished in the same manner, those in the bronchial tubes, those in the alveoli, and those in the sputum may be reached by this vapor, or by anything which may be deeply and persistently inhaled. But these bacilli are comparatively inert; they are harmless; they have already accomplished their mission of destruction, and are being extruded from the body. Those whose destruction is very much more desirable, those which have not yet, but which certainly will, produce consolidation and softening, *i. e.*, destruction of lung tissue, those in the pulmonary connective tissue, and the lymphatic sheaths of the blood vessels, can these be reached by anything that may be inhaled? Again, if we grant that in a certain patient every bacillus has been destroyed, this is by no means synonymous with his cure. Evidences of this fact are presented daily; patients die of non-tuberculous phthisis very readily. And the tuberculous patient with every bacilli in his lungs destroyed, possesses still that fatal predisposition, and will be reinfected.

It is a question also whether mercurial vapor is a germicide. No one will deny this property to corrosive sublimate. But corrosive sublimate is not volatilizable, and volatilized mercury, volatilized calomel, and red oxide, are very different substances indeed.

Despite these theoretical objections I am encouraged to proceed with this treatment of phthisis, and when I have perfected the apparatus and have a series of cases certainly tubercular, as demonstrated by the discovery in the sputum of the bacilli, which Dr. Matson has kindly consented to do for me, I shall report again to the Society.

THE DIURETIC ACTION OF CAFFEIN IN COMBINATION WITH PARALDEHYDE.—Their attention having been drawn to the excellent experimental studies made by VON SCHRODER concerning the diuretic action of caffein, V. CERVELLO and G. CARUSO-PECORARO (*Sicilia Med.*) have tested its effects in the human subject. The first patient, a woman, 40 years of age, exhibited a moderate degree of intra-peritoneal exudate, the result of venous stasis from a heart lesion. A combination of caffein with paraldehyde resulted on the first day in an increase in the excretion of urine from 900 ccm. (the previous amount) to 1,690 ccm. By the eleventh day the amount had been increased to 2,100 ccm., and the ascites had markedly diminished. In like manner a similar result was effected in the case of an individual 22 years old, who also suffered from a heart lesion. In a case of chronic diffuse nephritis with marked œdema,

the patient's condition was considerably improved by the administration of caffein and paraldehyde the quantity of urine passed increasing from 800 ccm. to 2025 ccm. Quite as favorable as this was the result produced in a second and similar case of nephritis. This combination of remedies has also produced absorption in sero-fibrinous pleuritis, with abundant exudate and no tendency to spontaneous resorption.

The paraldehyde is given either in capsules or solution in doses of 2-3 grm. two or three times a day; the caffein in doses of 0.25-0.5 grm. The paraldehyde should always be administered toward evening in order that its soporific effects may be felt at bedtime. In ascites following cirrhosis of the liver, the usual and favorable diuretic effect of the caffein was not obtained.—*Centralblatt f. Klin. Med.*, No. 34, 1889.

REPORT OF TEN OPERATION UPON THE KIDNEYS.—(E. DOYEN, before the Académie de Médecine.) These ten operations were performed by the lumbar method. Three patients upon whom nephrectomy was performed died. In two of these there was old renal tuberculosis, and the opposite kidney had undergone amyloid degeneration. The third had suffered from attacks of hectic fever for six months and the kidney contained a large calculus. In all three cases the operation presented great difficulties on account of the size of the purulent kidney, as well as the extent and firmness of the adhesions. The removal of the kidney in the other cases operated on was relatively easy and recovery occurred without the slightest complication. One of these had undergone an operation for the establishment of an uretero-cutaneous fistula forty-two days before the nephrectomy, the left ureter having been divided during an ovariectomy.

Two other cases are of particular interest. One was that of a woman 42 years old, who submitted in June, 1887, to removal of a tuberculous kidney together with the upper third of the degenerated ureter; to-day she is in perfect health. In another case, two years after removal of the right kidney (which was reduced to a fibrous shell containing more than 100 calculi) it became necessary to perform nephrotomy and lithotomy on the left side on account of a calculus deeply engaged in the ureter. This intervention was followed by complete success.

In two operations nephrorrhaphy was performed through a simple vertical incision. The kidney was fixed to the quadratus lumborum and the musculo-en-aponeurosis by four sutures, which were pressed as deeply as the pyramidal region; the fatty capsule was resected; the results have been excellent.

In cases of lithiasis nephrotomy is indicated, being preferable to nephrectomy, because a very small bit of renal tissue becomes precious when

the second kidney is affected. Incision followed by curetting of the cheesy foci should be preferred to nephrotomy in cases where there is a very large and very adherent tubercular kidney. *Le Bulletin Médical*.

CAUSE OF LOCAL RECURRENCE AFTER AMPUTATION OF BREAST FOR CARCINOMA.—(LOTHAR HEIDENHEIN in Langenbeck's *Archiv für Klinische Chirurgie*, vol. 39, Heft 1.) In making a most thorough and complete study of several thousand microscopic sections taken from the cut surface of eighteen different breasts, removed by Prof. Kuster, he has come to the following conclusions: That although in each case the cut surface was a considerable distance from the tumor, in nine cases portions of the fascia of the pectoralis major, which remained, certainly contained microscopic collections of carcinomatous cells, in three others this condition was possible although not proven, while six cases seemed to be free from remnants. The clinical observations of these cases so far corresponds very closely to this. He found that the invasion of the surrounding tissue took place through the lymph channels and along the lymph spaces surrounding blood vessels and in the connective tissue trabeculae, but reaching the fascia of the pectoralis major they filled this structure, but did not penetrate the muscle except in advanced cases, *but this fascia can be removed only by taking with it a layer of the muscle*. This is the practical point which will probably save hundreds of cases from having recurrence of mammary cancer in the future. The article covers 70 pages and is of very great scientific and practical value. The author also confirms other previously observed facts.

AN ABORTED OVUM OF THREE MONTHS' DEVELOPMENT.—In the Obstetrical Society of Vienna, PROF. GUSTAV BRAUN exhibited an aborted ovum of three months' development, in which the relation of amniotic bands to arrested foetal development was susceptible of beautiful demonstration. The foetus itself was macerated; the cord 9½ cm. long, which was torn during birth, passed from the umbilical ring under the left axilla to the neck, around which it took a turn and then passed around the right shoulder, which appeared as though ligated by it. There were also fibrous bands in connection with the fingers and toes. Prof. Braun thought that the relative shortness of the cord was the cause of death, and that if development had advanced spontaneous amputation would probably have occurred.—*Cent. für Gyn.*, 1889, No. 34.

YELLOW FEVER is epidemic in many localities in Cuba, the mortality being relatively high, especially in Havana.

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THE CAUSES OF WASTE IN CONSUMPTION.

Loss of tissue is so characteristic of pulmonary tuberculosis that it has given the popular name to the disease. Not the fat alone of the body is thus affected, but it is also observed in the muscles and organs. This loss of weight is so early a symptom that there would seem to be an inherent tendency in the disease in this direction. Still, a little consideration shows there are certain conditions capable of causing waste independently of any inherent influence in this direction. In most cases even of incipient phthisis there is a positive want of sufficient nourishment to supply the needs of the organism. This is due generally to a loss of appetite amounting to actual aversion for food, as well as to defective assimilation. In some, however, the appetite remains good, but either the digestion is imperfect or the system is incapable of appropriating the nourishment supplied. There is, therefore, in these patients profound anæmia. Yet, the fact that many times anæmic individuals, who are not consumptive, take on fat, apparently as the result of incomplete oxidation, would seem to indicate that the anæmia of phthisis is linked to some subtler cause of wasting, some molecular defect of the tissues, some chemico-physiological peculiarity.

Later on in the development of this malady there are certain very apparent causes of the emaciation, chief among which is fever. That fever causes an increased destruction of the tissues is proved by the augmented excretion of carbonic acid, according to Landois, of from 70 to 80 per cent., and by the increase in the amount of urea,

uric acid, and other solid constituents of the urine. The urea is increased from one-third to two-thirds and the potash may even reach many times its normal amount. But not only does fever directly influence the consumption of tissue, it also still further impairs appetite and digestion, in this way favoring waste. An indirect proof of the deleterious effect of an elevated temperature, and an indication for treatment, is afforded by the fact that when the body temperature becomes permanently reduced to the normal, the weight of the patient is apt to increase or at least remain stationary.

Another potent factor in promoting emaciation is profuse sweating. This symptom is complained of because productive of so much discomfort and exhaustion. It is serious, however, for another reason, viz.: because it robs the system of much valuable material. More than 1 per cent. of the perspiration is made up of solids, organic and inorganic, and when it is considered that 2 lbs. of liquid leave the body in twenty-four hours in the form of insensible perspiration, it becomes intelligible how serious must be the loss from the night sweats of the consumptive. To be sure, the great loss of fluids thus sustained can be rapidly recovered from by the ingestion of more fluids, but the salts contained in the perspiration are sadly missed by the system, and, if not replaced, form a positive source of waste.

In most cases, particularly those at an advanced stage, the profuse expectoration is an additional cause of emaciation as well as of loss of strength. Even when there is no blood in the sputa, the system is subjected to a heavy tax to contribute the leucocytes, mucus and other elements composing so large a part of the expectoration. When, moreover, hæmoptysis occurs, very decided impetus is given to the wasting process, and the patient appears to fall away before one's very eyes. Such also is the case if there supervenes suddenly one of those obstinate diarrhœas that torment the consumptive. A patient, who may have regained a comparatively normal daily temperature and seems to be actually taking on a little flesh, will upon such an exhausting discharge grow suddenly gaunt and haggard and progressively fail despite all measures to the contrary.

In conclusion it may be said, the conditions that influence waste are the very phenomena which stamp this disease with its peculiar char-

acter. There can be no consumption without waste any more than there can be fever without elevation of bodily temperature, and in some this loss of tissue is so out of proportion to symptoms explaining it, that there would seem to be some subtle cause existing in the very nature of the disease which defies analysis.

LAWSON TAIT ON FIBROIDS OF THE UTERUS.

A few weeks ago we called attention to the views of THOMAS KEITH on Apostoli's treatment of uterine fibroids by electricity. It is, perhaps, no more than fair to give place to the rejoinder of the most prominent advocate of the purely surgical method of dealing with this condition. In a lecture, published in the *British Medical Journal* of August 10, 1889, MR. TAIT calls attention to the fact that hysterectomy, which Mr. Keith seems to consider the only alternative treatment, is only required in a small proportion of cases, and that the great majority can be satisfactorily treated by the comparatively safe and simple operation of bringing about the menopause by extirpation of the uterine appendages. He claims that "the complete and permanent efficacy of this method of treatment has been established by evidence beyond all cavil; in fact it stands unrivalled in the history of modern surgery," and states that his mortality in 262 consecutive cases has been only 1.23 per cent. To the operation of hysterectomy he expresses as strong a repugnance as Keith; but, although he does not expressly discuss this point, he evidently has little faith in the efficacy of electricity in cases which call for the severer measure.

To electricity he objects that it is tedious, and, notwithstanding Keith's statements to the contrary, may be very painful, citing a case, treated in Paris, in which electricity was used thirty-three times during a period of three months, and thirty-one times the patient was under anæsthesia. That it sometimes fails when administered by thoroughly competent persons, he has had evidence in cases which have come into his own hands, and there is danger of losing precious time in unsuccessful treatment.

He complains that Keith furnishes many statements, but few facts, and wishes for precise information in regard to the mortality of the electrical treatment, the permanency of the results

secured, and the comparative convenience and expense of the two methods.

He concludes by quoting what he calls the "prodigious statement" of Keith, that in 10 per cent. of his cases of hysterectomy the operation was followed by insanity. On this point he says: "In not one of my hysterectomies has insanity followed the operation. I have seen insanity follow removal of the appendages for myoma in two cases, but in one the patient was insane from the moment she came out of the chloroform, and she was "queer" before she went under it."

In view of such results as Tait has achieved it is not surprising that he should have little inclination to change the methods which have proved so successful in his hands. If any value is to be allowed to evidence, however, it can hardly be doubted that very satisfactory results have been attained by the electrical treatment. Martin, of this city, at the meeting of the Illinois State Medical Society, May 22, 1889, reported one hundred consecutive cases treated by Apostoli's method, without a death, with complete cure in eight cases, symptomatic cure in sixty-eight others, and decided improvement in the symptoms of most of the remainder. If such results can be secured by this method and should prove permanent, it is likely that many women will prefer, even at the cost of some pain and inconvenience, to avoid a mutilation which is repugnant to their feelings and, besides the inevitable result of sterility, is not always exempt from other unpleasant consequences. Glævecke, of Kiel, found that a depressed, low-spirited condition was generally observed after removal of the ovaries; in three cases out of forty-three insanity followed the operation, proving permanent in one. Sexual desire and pleasure were diminished in nearly all the patients, and the disturbances usual at the menopause were prolonged, in a number of cases, for four or five years.

Brilliant as have been the results of surgery in the relief of this affection, it can hardly be said that they leave nothing to be desired, and anything which promises the benefits without the drawbacks of the operation with which Mr. Tait's name is specially associated is worthy of careful trial. It is hardly probable that electricity will wholly supplant operative treatment, but it may well be that when both have been thoroughly tested it will appear that each has its appropriate field of usefulness.

EDITORIAL NOTES.

HOME.

THE AMERICAN PUBLIC HEALTH ASSOCIATION.—The seventeenth annual meeting of this Association will convene at Brooklyn, on October 22, 23, 24 and 25. From a review of the topics to be presented at that meeting, a list of which will be found on page 504 of the present issue, and from the prominence of those who are to engage in the discussion of these subjects presented, we have reason to believe that the meeting will be one of unusual interest. We shall endeavor to present our readers with as full a report of its proceedings as the columns of *THE JOURNAL* will permit.

THE MEDICAL COLLEGES in Chicago opened last week with a large attendance of students.

PROPOSED PUBLIC BATHS FOR CHICAGO.—The Trade and Labor Assembly some months ago petitioned the city council for a system of public bath houses. The matter was referred for investigation, and Chief Tenement Inspector Young has prepared plans. He favors bath houses built on the cottage style, 100x55 feet, each to contain forty-one dressing rooms and an office for the keeper. The cost will be about \$3,000 each. The water at one end will be four feet deep and five at the other end. The slope to be gradual. Mr. Young thinks that one should be anchored in each of the park lakes in the city, and others along the lake shore. The report will be sent to Commissioner Purdy and by him referred to the council.

THE AMERICAN ACADEMY OF MEDICINE, of which Dr. Leartus Connor, of Detroit, is president, and Dr. R. J. Dunglison, of Philadelphia, secretary, will hold its annual meeting in Chicago, on the 13th and 14th of November.

WORK OF THE GEOLOGICAL SURVEY.—Major J. W. Powell, chief of the geological survey, was in Chicago last week, after fifty-five days' work as advisory member of the senatorial committee investigating irrigation in the West. The committee began work at St. Paul and concluded its labors at Ogallala, Neb. It visited the Dakotas, Oregon, Montana, Washington Territory, Idaho, Utah, Nevada, California, Arizona, New Mexico, Texas, Indian Territory, Kansas, Colorado, Wyoming, and Nebraska—every State containing arid lands.

Eighty meetings were held and 200 witnesses heard. Major Powell thinks over 100,000,000 acres of land can be irrigated successfully. The resolution under which the committee was appointed did not contemplate appropriations for building reservoirs and artificial lakes—merely a thorough survey of the territory, that the work may be done by private enterprise. Major Powell thought Congress would never take charge of the construction of the ditches and reservoirs. The survey of Illinois, particularly along the proposed line of the drainage canal, is progressing, and will probably be completed in another year.

PRIZE OF THE PHYSIOLOGICAL SOCIETY.—Dr. Wier Mitchell has placed at the disposal of the American Physiological Society the sum of \$200 as a prize for original work in nerve physiology, which work shall have been done after January 1, 1886, and before October 1, 1890. At the latter date the competition closes, and essays must be in the hands of Dr. H. Newell Martin, secretary of the Society. The award will be made by the council of the Society. The subject, which has been selected by Dr. Mitchell, relates to the rate of nerve transmission in man, and the circumstances which cause that rate to vary.

MEDICAL SOCIETY OF VIRGINIA.—At the twentieth annual meeting of this society, held in Roanoke, September 3, 4 and 5, 1889, the following officers were elected for the ensuing year: Dr. Oscar Wiley, of Salem, president; Dr. J. M. Estill, of Tazewell Court House; Dr. Alfred C. Palmer, of Norfolk, and Dr. Casper C. Henckel, of New Market, vice-presidents; Dr. Landon B. Edwards, of Richmond, recording secretary; Dr. J. F. Winn, of Richmond, corresponding secretary; and Dr. Richard T. Styll, of Hollins, treasurer. Dr. John S. Apperson, of Glade Spring, was chosen to deliver the address to the public and profession during the session of 1890. Dr. C. T. Lewis, of Clifton Forge, was selected as the leader of the discussion of the selected subject for 1890—"The Treatment of the Summer Diarrhœa of Children." Dr. R. F. Young, of Love's Mill, and Dr. P. B. Green, of Wytheville, were nominated for commission as members of the Medical Examining Board of Virginia, to fill vacancies occasioned by two resignations. Rockbridge Alum Springs was selected as the place for the annual session of 1890, some time between the 25th of

August and the 5th of September, as the Executive Committee might hereafter determine.

JELLY-FISH STING.—*The Medical News* says that bathers who have encountered the long tentacles of a medusa will be pleased to know that the "sting," or erythema, may be speedily relieved by the application of water rendered alkaline by common washing soda, in the proportion of an ounce of soda to about two quarts of water. Dr. B. M. Richardson states in the *Asclepiad* for September, that he has personally tested the efficacy of the treatment, and has also used it successfully in several severe cases.

THE NATURAL MINERAL SPRINGS OF THE UNITED STATES.—An important meeting of gentlemen interested in the natural mineral springs of the United States, was held at Washington last week, and a temporary organization effected by electing Thomas Tomlinson president and Dr. A. Emfield secretary and treasurer. The attendance was large, and a general convention was called to meet at Chicago, November 19. A committee was appointed consisting of James W. Inches, D. L. Sterling, and Alfred Moore to formulate a plan of permanent organization, and to report at the Chicago meeting.

HOW MUCH SHOULD A CITY PAY ITS HEALTH OFFICER?—The Michigan State Board of Health has recently published a paper by its Secretary, Dr. H. B. Baker, in which he asks the question how much the average city or village can afford to pay its Health Officer. He answers this question in this way: Statistics which can not be questioned prove that in those localities in Michigan where the recommendations of the State Board of Health are carried out about 80 per cent. of the deaths from diphtheria and scarlet fever are prevented by the thorough isolation of all infected persons and the thorough disinfection of all infected persons, things and places. Statisticians usually value a person in the prime of life as worth to the community about \$1,000. Dr. Baker thinks that in a village of 1,500 inhabitants a health officer can easily save the lives of two children and one grown person in each year, and he concludes that such a village can well afford to pay its health officer \$2,000 for the prevention and restriction of scarlet fever, diphtheria and typhoid fever, and make money by the transaction.

FOREIGN.

YELLOW FEVER IN SPAIN.—Reports have been going the rounds of the papers relative to an alleged epidemic of yellow fever at Vigo. There were several cases of gastric and typhus fever, but none of yellow fever.

LEPROSY IN THE ORIENT.—In the Academy of Medicine, Paris, M. Zambaco recently stated that the question of the contagiousness of leprosy, though admitted by many, was not yet settled in his own mind. He had not discovered an example of contagion either in Turkey or in the other oriental countries that he had visited. Until he is better informed he will remain an anti-contagionist, for he believes that if leprosy is contagious at all it is only very exceptionally so.

CHOLERA is prevalent at Pekin, China, and nearly all the foreign residents have fled to the mountains.

OVERCROWDING OF THE PROFESSIONS IN GERMANY.—Prof. Lexis of Berlin has been writing a pamphlet on the undue increase in all the learned professions. He says there are twice as many students as can hope to make a living by the professions which they are preparing to enter.

THE French law gives a physician's claim against the estate of a deceased patient precedence.

ANOTHER ELIXIR OF YOUTH.—The *British Medical Journal* says that it is stated by a Pesth newspaper that Dr. Szikszay, a Hungarian physician, has been making experiments in the State Prison at Engelsfeld by injecting a liquid, the composition of which is not revealed, into aged persons. The results are said to be remarkable. The strength of the "subjects" was tested with a dynamometer before and after the injections. In the case of a man aged 75 years the strength was found to be increased after the seventh injection from 14 to 19 kilograms, and after the thirteenth to 35 kilograms. Experiments on men and women of different ages showed, as might be expected, marked individual differences. We may take the liberty of suggesting to Dr. Szikszay that he should communicate the details of his experiments to the Imperial and Royal Society of Physicians of Vienna, and then publish them in full in some medical journal. The after results, if any, should also be made known.

TOPICS OF THE WEEK.

STUDY OF YELLOW FEVER.

DR. GEORGE M. STERNBERG, Major and Surgeon, United States Army, has just returned from a six months' stay in Cuba, where he has been continuing his researches with reference to the cause and prevention of yellow fever.

He found in the hospitals a sufficient number of cases, and in the course of the summer made thirty autopsies. He has brought with him specimens in alcohol and cultures of microbes with which he will continue his investigations during the winter at the Johns Hopkins University. At the end of this time he hopes to present a general report of his investigations to President Harrison.

"My researches up to the present," said Dr. Sternberg, "have not led to a positive demonstration of the specific cause of the disease. But I have isolated a considerable number of pathogenic bacilli—disease-producing germs—from the intestines of yellow fever cases, and have strong hopes that one or more of these may prove to be the specific germ. I have confirmed my previous conclusions as to the absence of specific microbe organism in the blood and tissues of the patient, and have failed to find in any of my cases the germ which Dr. Freire of Brazil has claimed to be the cause of the disease. For this reason I have given my attention entirely to the bacilli of the alimentary canal. As none of the lower animals are subject to yellow fever, and inoculation will therefore be impossible, it will be extremely difficult to arrive at a positive demonstration. It will, moreover, be necessary to make extensive comparative researches to ascertain the character of the bacterial flora in the intestines in other diseases. I have isolated a long list of unknown and undescribed bacteria found in the digestive system of yellow fever patients. But I have yet to prove that some of these are uniformly constant in this disease and are not found in others. For instance, in all my researches I have never found the comma bacillus of Koch, now generally believed to be the cause of cholera."

PHENACETIN.

In a paper prepared by DR. B. FRANK HUMPHREYS, of Texas, upon "The Uses and Abuses of the New Antipyretics," he quotes the clinical experiences of various observers in connection with the uses of this new remedy, as follows:

Dr. G. Kobler, assistant at the medical clinic of Prof. von Bamberger, at Vienna, under whose direction he experimented, was the first to observe the effects of phenacetin as an antipyretic remedy. Fifty cases with high temperature came under his observation. Dr. Kobler makes the following remarks with reference to the properties of this new antipyretic:

(a) A specific influence on the course of the disease itself was never observed.

(b) Phenacetin in every case was borne well without any toxic or even disagreeable effects.

(c) The reduction of temperature is, as a rule, pretty

rapid, while the subsequent rise is comparatively much slower. Large single doses of phenacetin have a decidedly more energetic effect than small doses frequently repeated.

(d) There was never any cyanosis or collapse, such as is not infrequently seen during the administration of some other antipyretics. Even in the ten cases of pneumonia treated with phenacetin there was no deleterious action on the heart, which we often meet with in the course of this disease.

Summarizing his experience, Dr. Kobler comes to the following conclusions:

1. Phenacetin is a very efficacious antipyretic.
2. It has no disagreeable or deleterious effects, such as cyanosis or collapse.
3. It produces decided euphoria.
4. It is best administered in single doses of from 8 to 12 grs., instead of smaller ones given every hour or two.
5. The reduction of temperature after such a dose is from 3.6° to 4.5° F.

Dr. Hugo Hoppe, of Berlin, under the direction of Prof. Albert Fraenkel and Dr. Paul Guttman, medical director of the City Hospital at Moabit, has collected notes of twenty cases affected with maladies in which there was pyrexia, nine of whom had typhoid fever. Dr. Hoppe's paper is a carefully written thesis, very elaborate and minute in clinical notes, taken with reference to the therapeutic action of phenacetin. He arrives at very similar conclusions to his predecessor, Dr. Kobler; and although neither of these clinicians observed any untoward effects of the drug, even in doses of from 15 to 30 grs., Dr. Paul Guttman afterwards informed Dr. Hoppe that he had observed a severe chill in a child during the subsequent rise of temperature after the exhibition of phenacetin, without stating, however, the quantity administered or age of patient. Now, it is alleged that in Kobler's fifty and Hoppe's twenty cases there were no rigors observed upon the subsequent rise of temperature. A reasonable inference, therefore, would be that in Dr. Guttman's single case the child had probably received a dose which "transcended the exclamation point," or that it may have been a single exception to the action of the medicine as a rule.

Professor Giuseppe Cattani, physician to the Grand Hospital at Milan, has tried phenacetin in more than fifty different cases, mostly febrile diseases, and his reports are almost exclusively favorable. One of the many forms of disease in which he has used phenacetin with advantage is rheumatic endocarditis, in which, he says, it acts like a tonic by rendering the heart's action steady, even where a valvular lesion has been established, as, for instance, in mitral incompetency. Prof. Cattani, like Prof. Dujardin-Beaumetz, thinks that in its analgesic property, phenacetin outrivals its predecessors. Dr. Gaiffé has found phenacetin of considerable benefit in nervous polyuria. He says the heart and pulse are never influenced by this drug. Drs. Cesari and Burani confirm most of the antecedent observations of others with reference to the action of phenacetin. Drs. Misrachi and Rifat contribute a clinical study of phenacetin, in which they also recommend the drug as an effective

antihyperthermic and antinervine remedy. In children's practice they advise it to be rubbed up in some sugar, which, they say, totally disguises any taste or smell.

Prof. Rumpf, of Bonn, says that this drug, as now produced by the manufacturers, is almost chemically pure phenacetin, and that it has no disagreeable action whatever, if given in doses not exceeding 45 grains daily. In doses of 15 grains daily, he says, it is absolutely harmless, and that there are no nausea and vomiting, no cyanosis and syncope, and no untoward symptoms in patients with high temperature.

The dose administered by Prof. Rumpf was 15 grains, by which the temperature was reduced 3.6° to 5.4° F. within from two to four hours. In a case of pleurisy, for instance, the temperature fell from 104° to 99.2° F., and on the next day from 103° to 99° F. within four hours. Having found that 15 grains of phenacetin would in some cases cause the temperature to fall below the normal, Prof. Rumpf advises that the dose given in febrile maladies should never be larger than 8 grains; but, strange as it may seem, even when given in doses of 45 grains, it is alleged that the drug never caused any nausea, vomiting, chilliness, cyanosis, or eruption of the skin; only profuse perspiration was observed in some cases.

Encouraged by the favorable results obtained by Hoppe, Heusner, and Dujardin-Beaumetz, with the administration in cases of hemicrania and other forms of neuralgia, Prof. Rumpf tried the drug, with regard to its analgesic property in a great number of cases, with uniformly satisfactory results, the dose in such cases being 15 grains. The effects of the medicament were observed in many cases within thirty or forty minutes after its administration, in other cases not until an hour or two had elapsed.

From a considerable clinical experience with this new candidate for favor, Prof. Rumpf arrives at the following conclusions with regard to its therapeutic properties:

1. Phenacetin is an antipyretic of reliable action and certain effects, from all untoward and disagreeable symptoms.
2. Phenacetin is to be recommended as an antineuralgic in 15-grain doses, viz.:
 - (a) In all cases of vaso-motor neuroses.
 - (b) In locomotor ataxia against the lancinating pains, and in cases of chronic neuritis against neuralgia.
 - (c) In various cases of neuralgia, to soothe the pain at least.

Prof. Mueller, at the meeting of the Verein für Innere Medizin, at Berlin, July 2, 1888, in a discussion with regard to the merits of phenacetin, confirmed the observations of the authors detailed herein, and further added that in daily doses of 75 grains or less its exhibition is never followed by cyanosis and methæmoglobinuria. This statement if found true by other observers, will prove to be a strong argument in favor of the claim that the drug is comparatively safe in large doses, and innocuous in medicinal doses.

Some distinguished English physicians have expressed a favorable opinion of phenacetin, corroborating the observations of the writers already mentioned.

Prof. Dujardin-Beaumetz says: "Phenacetin is a rival of antipyrin and antifebrin; in a word, it is an antipyretic and a nervous sedative. It is not unlikely that it is more active than either of the two agents just named. . . .

"I have tried it in doses of 5 grains, given in wafers, and I must say that I have observed—as others have done before—a considerable reduction of temperature in tuberculous, feverish patients, and in those suffering from typhoid fever. This reduction, which amounted to 5.4° F. in some cases, is remarkably persistent, although the dose is comparatively small; it lasts from eight to ten hours. On the duration of the disease itself the new remedy has no influence, just as with the other antipyretics.

"Phenacetin is also a strong analgesic, more powerful in its action, perhaps, than either antipyrin or antifibrin. And it acts very rapidly, in spite of its insolubility; in the gastric juice, about twenty minutes after its administration, its effects may already be observed.

"I will state in addition that phenacetin does not produce cyanosis, like antifibrin, and that in contradistinction to the latter, its presence in the urine may be detected; ferric perchloride will turn red, and cupric sulphate will turn green, if added to urine containing phenacetin."

Prof. R. Lépine, of Lyons, in a paper on typhoid fever, also expresses satisfaction with the effects of this new medicament. He says, however, that after daily doses of 90 grains there is some headache and some cyanosis; but in doses of 45 grains he says it does not affect the heart, and produces neither cyanosis nor any other untoward symptom, except, perhaps, some sweating. He gives it in 8-grain wafers, of these six to eight a day. From the foregoing it is to be inferred that the drug, in very large doses, or perhaps if long-continued in smaller doses, may produce blood changes not very unlike the effects of antifebrin.—*Therapeutic Gazette*.—*The Practitioner*.

HEMORRHAGE FROM THE LARYNX.

In a paper read by DR. WILLIAM PORTER, of St. Louis, at the eleventh annual meeting of the American Laryngological Association upon this subject, he presents the following conclusions:

1. Laryngeal hæmorrhage may occur from simple local conditions.
2. Unless associated with other and more positive symptoms, it is not indicative of pulmonary lesion.
3. It is possible, through the passing of blood from the larynx into the lungs, that pulmonary disease may be incited.
4. Care should be taken to distinguish between pulmonary and laryngeal hæmorrhages, not only for the sake of more exact treatment, but especially because of the more favorable prognosis that may be given in many cases of the latter condition.—*New York Medical Journal*.

A NEW hospital has been erected in Denver, Colo., at a cost of \$30,000.

PRACTICAL NOTES.

MILK SUGAR AS A DIURETIC.

PROF. SÉE has recently presented the result of his study of the diuretic action of milk sugar, which he considers the most reliable of all diuretics. In diseases of the heart and stomach, and also in renal or cardiac affections accompanied by dropsy, its diuretic qualities render it very serviceable. Milk in these cases, as is well known, is of great value, not only on account of its diuretic properties, but also because it is so complete a food. Three or four quarts of milk a day may be used with advantage, but the proportion of sugar in milk is rather too small. Prof. Sée has discovered, by experimenting successively with the different constituents of milk, that lactose is the active agent. The action of the other constituents of the milk, such as the water and the salts, is inconsiderable, the chloride of sodium adds nothing, and the salts of potassium very little, to the polyuria induced by the sugar of milk.

This sugar is found in all kinds of milk, is crystalline, and quite soluble in water. About three ounces of it dissolved in two quarts of water, with complete suppression of every other liquid, as soup, tea, wine, mineral water, etc., will afford marked diuresis in all cardiac troubles, no matter what the lesion may be, though the results are less constant in arterio-sclerosis.

In twenty-five cases abundant diuresis resulted; at least eighty ounces of urine were passed, usually one hundred or more, in the twenty-four or forty-eight hours subsequent to beginning the treatment. As soon as the treatment was stopped the amount of urine fell off to what it had been before the administration of the diuretic. Prof. Sée, therefore, considers lactose to be not only the most efficient diuretic, but also the least harmful. If milk is used and two quarts only are taken, diuresis follows; if four quarts of milk, containing six and one half ounces of sugar of milk, marked glycosuria is produced; at the same time there is considerable excretion of urea, indicating a destruction of the albuminates. With the sugar alone these disadvantages may be avoided, for three and a quarter ounces of milk sugar in water will set up a copious diuresis, such as we cannot be sure of having from even four or five quarts of milk.

The polyuria resulting from this treatment surpasses that from all other methods; the amount of urine rises rapidly to two, two and one-half, usually to three or three and one-half quarts, and even to four or four and one-half quarts on the third day. After this it remains at that point, or drops to two and one-half quarts for some days. After a few days the same treatment may be employed to repeat the diuresis.

It is fair to say that this action of lactose may be relied upon in cases of cardiac dropsy, but in those of renal origin its effects are slight. In cardiac disease it never fails unless the kidneys are diseased and the amount of albumin is considerable. When the amount of albumin is small the result is favorable, from which it may perhaps be inferred that there is present only a simple venous congestion.

It is suggested that the diuresis may serve as an indication of the condition of the kidneys. Various conditions may affect the diuresis; sometimes diarrhoea occurs, and this diminishes the amount of urine, or the patient may have been subject to profuse sweating, which would also lessen the quantity of urine.

As a rule the remedy is well borne. It may be prescribed for eight or ten days and then omitted for a few days and again renewed. If the simple solution is not well tolerated, brandy or peppermint may be added to it. All other liquids should be reduced in amount or omitted while this treatment is pursued.

This method presents great advantages over many others, and the patient may partake of any food, a meat diet, if the physician so desires. Prof. Sée considers that the physiological action of lactose is upon the kidneys, since it does not exert any influence upon the circulation. He classes it with caffein, as he believes that caffein acts upon the kidneys only, and not through the circulation, as do digitalis and strophanthus.

Lactose is regarded as superior to caffein, as it does not affect the brain and nervous system. —*L'Union Médicale, American Journal of the Medical Sciences.*

EPILEPSY TREATED BY AMYL NITRITE.

Having read a few weeks ago in this journal Dr. Woods' treatment of epilepsy, and being called to a very severe fit in a young man who has been an epileptic from birth, and whose mind has been so impaired that, though 21 years old, he is unable to read, write, or dress himself, I determined to try amyl nitrite. After inhalation of one capsule, the convulsion ceased, and in about twenty minutes the patient was himself again, the insensibility which always followed the fits being almost nullified. Since then the drug has been tried four times, and each time with success; if administered at the commencement of the fit, the latter was aborted, and the insensibility almost completely prevented. This patient is in the habit of having, on an average, a fit daily; and frequently a succession of fits—status epilepticus. He has been a patient for years at the Epileptic Hospital, Queen Square, and has been taking bromides daily, but apparently with no effect. I hope soon to be able to give an account of the action of nitro-glycerin tablets, which he is at present tak-

ing, in the hope that they will render the fits less frequent.

I believe that hitherto the amyl nitrite has been used only in the status epilepticus, but it appears to me to be also useful in severe single fits. The *rationale* of its action has not, I think, been worked out, but obviously would seem to be due to its dilating influence on the cerebral arteries contracted during the convulsions.—J. P. PARKINSON, M.B., in the *British Med. Journal*.

THE DRINK QUESTION IN FRANCE.

The recent Anti-Alcohol Congress in Paris showed that the dram shops of Paris have risen since 1880 from 24,000 to 29,900. In thirty years the consumption of alcohol has been trebled, and as much as 36,000,000 galls. have been manufactured out of potatoes for the French market. This shows an average yearly consumption of over 12 quarts per adult man. The consumption of alcohol doubled between 1875 and 1885. The Congress voted a resolution that inebriates should be treated as mad, and that prison hospitals should be created for them. It was also resolved that the Governments of the world should be asked to impose a prohibitive duty on alcohol, and exempt from duty tea, coffee, and other ingredients for temperance drinks.

THE MILK OF TUBERCULOUS COWS.

At the Congress on Tuberculosis held in Paris in July, 1888, it was unanimously conceded that the milk of tuberculous cows was dangerous for use. Some held that it was only so when the udder was affected with tubercular disease; but as it is impossible for milkers and dairymen always to diagnose this, they unanimously recommended that all milk should be boiled. There was some difference of opinion as to the use of meat of tuberculous cows. Dr. Trocart held that if the disease is localized the flesh does not contain any bacilli. Dr. Arlving contended that in his experience virulent bacilli existed in the muscles of tubercularized animals in one-fifth of the cases. He desired to see tuberculosis inscribed among the infectious diseases, and thought the flesh of tuberculous animals should be prohibited as food till means were found to render it harmless. He suggested the creation of a permanent committee to carry out, in cities and towns, the realization of a complete sanitary organization. It was learned that in Paris, Brussels, Constantinople and other large cities the meat is condemned if the disease is generalized and the cattle emaciated. After a lengthened discussion, which brought out a great many interesting facts in relation to the etiology of tuberculosis and its communicability, the following resolution was

voted upon and carried almost unanimously: "It is necessary to carry out, by all possible means, including indemnification of those interested, the general application of the principles of seizure and total destruction of all meat coming from tuberculous animals, whatever may be the gravity of specific lesions found in those animals." Chauveau, President of the Congress, suggested that simple instructions should be printed and widely distributed throughout the cities and towns and in the country, explaining the danger of drinking tuberculous milk and eating tuberculous meat, and the ways of rendering the meat inert. Though much has yet to be learned on this vital question, enough proof has already been adduced to warrant the adoption of active measures towards the extermination of tuberculous cattle. Is not the Government called upon to deal with tuberculosis as it does with pleuro-pneumonia?—*Montreal Medical Journal*.

TYPHOID FEVER—ANTIPYRIN RASH.

In the case of a girl of 25 years suffering from severe typhoid fever, with the temperature for several nights at 105°, antifebrin was given without marked effect, and subsequently antipyrin. The latter reduced the temperature for a time, but after two doses had been taken a rash broke out on the face and neck. It did not resemble urticaria or measles. The forehead became of a pale red color, like the skin of a newborn baby, and there was slight puffiness of the lids. On the neck the pale red patches were somewhat discrete. By next morning all the rash had disappeared. Antipyretics were abandoned, when, after two days, the temperature fell to 102° and 101°, and the symptoms improved. The action of antipyrin in producing rashes seems to be very common, though so far I have seen but these two cases. The journals contain many such records. The rashes are described as measly, erythematous, or urticarious.—MONTREAL HOSP. REP., *Montreal Med. Journal*.

INGESTION OF ASCITIC LIQUID.

Probably the most remarkable potation on record is that of an inmate of the hospital at Obernay, France, who, after being tapped for the fifty-third time, took advantage of an opportunity to drink off about eight ounces of the product of his own peritoneum, and with apparent relish. But what is more and stranger, his dropsy has not recurred within the year that has elapsed since he took the beverage, the œdema has been reduced, and he has been enabled to resume his employment. Dr. Duhamel is responsible for this narration in the *Gazette Médicale de Strasbourg*.

SOCIETY PROCEEDINGS.

Association of American Physicians.

Fourth Annual Meeting, held in the Army Medical Museum and Library, Washington, D. C., September 18, 19 and 20, 1889.

(Concluded from p. 465.)

DR. D. W. PRENTISS, of Washington, reported

A REMARKABLE CASE OF SLOW PULSE EXTENDING OVER A PERIOD OF NEARLY TWO YEARS.

G. W. P., white male, carpenter, æt. 54 years. Has always been healthy; the only illness he remembers is neuralgia of stomach fourteen years ago. The only injury ever received was a fall a distance of 15 feet and striking on his feet, when 19 years old. Ten years ago a brick fell upon his head, cutting the scalp but causing no serious injury. Never had any form of venereal disease. Always temperate in the use of alcohol but not in the use of tobacco. He has been under the observation of the writer for sixteen years, but had never been attended professionally until present illness.

December 13, 1887, after working some time in a malarial locality, he began to have weak spells, and several times fainted on lifting heavy weights. Examination showed no well-defined disease. No fever, mind clear, pulse 36. Urine normal. No organic disease of heart discovered, the systole was full and strong, diastole greatly prolonged. Between December 13, 1887, and January 20, 1888, the pulse ranged from 22 to 76. During this time there were frequent attacks of syncope. During one fainting attack he fell down stairs. At another time fell out of a chair, remaining unconscious about a minute. After January 20, his pulse had reached 76, he had no more fainting spells. In March he resumed work. October 2, 1888, he had a relapse with the same symptoms as in previous attack. From this date to April 15, 1889, the pulse ranged from 15 to 44 per minute. The fainting attacks continued throughout this time, occasionally very severe. He improved to a certain extent, but about August 29 he began to have a return of the old symptoms. During the fainting spells the pulse fell to 12 or 15°. Between August 5 and September 18, the pulse ranged between 12 and 38° per minute, and between August 10 and August 15, it did not rise above 14° per minute. The temperature during this time was between 94.5° and 97°. The patient improved somewhat after August 15 and September 18 was well enough to present himself for examination before the Association.

The "spells" referred to, were described. They came on without warning, often without apparent cause, sometimes often exhaustive. He faints,

losing consciousness. They last from a few seconds to half an hour. Breathing gasping and slow. Face and hands, first pale, then dark and purplish. There is no pain. He has great confidence in the bromide of ammonium, which he thinks controls the attacks. The treatment of the case from the first has been rest in bed, tonics, stimulants, electricity and bromide of ammonium together with supporting diet. The tonics used were strychnia, opium and iron with belladonna. Digitalis was tried but made him worse. Nitroglycerine seemed to help for five doses, but later caused distress. Convallaria and strophanthus were tried with like result. The drug which appeared to give the most relief was bromide of ammonium, given in doses of 1 gram (15 grains) three times a day, and extra doses when paroxysms threatened.

The most interesting question in this case turns upon the pathology. What is the cause of the retarded action of the heart? The causes which may produce slow pulse may be classified as follows:

1. Disease or injury of the nerve centers, producing either irritation of the pneumogastric or paralysis of the sympathetic (acceleration) nerves of the heart.

2. Disease or injury of the pneumogastric nerve increasing its irritability.

3. Disease or injury of the sympathetic nerves of the heart—paralyzing them.

4. Disease of the cardiac ganglia by which the influence of the pneumogastric preponderates.

5. Disease of the heart muscle (degeneration) whereby it fails to respond to the normal stimulus.

6. Action of poisons, as of lead or tobacco, either on nerve endings or nerve centers.

In this case it is difficult to say to which of these divisions it belongs. There are no symptoms to indicate any form of disease of the nerve centers. There is no evidence of disease of the nerves themselves, nor has any organic disease of the heart been discovered. There is left only the action of certain poisons, and the question arises whether or not in some obscure way the conditions may not be due to tobacco poisoning from excessive smoking. Another possibility is malarial poisoning. The attacks first appeared while he was working in a malarial district, and in the summer of 1888 he had intermittent fever. These considerations make it probable that there is paralysis of the accelerator nerves and not an irritation of the vagus. The symptoms are due solely to defective circulation.

In many of the cases collected in connection with this report, the pathological appearances were a result of the slow pulse rather than a cause.

Abstracts were given of 55 cases of slow pulse

of which the following is a brief analysis as to causes: 1. Fracture or dislocation of cervical vertebrae, 9 cases. 2. Disease of brain, 9 cases. 3. Cerebral syphilis, 2 cases. 4. Sunstroke, 1 case. 5. Ossification of aorta valves and coronary arteries, 2 cases. 6. Starvation, exhaustion, loss of sleep, convalescence, 3 cases. 7. Epilepsy and epileptoid disease, 9 cases. 8. Heart disease, 6 cases. 9. Lead poisoning, poisoning by salt fish, pernicious fever, 3 cases. 10. Nervous shock, cholera morbus, 2 cases and 11, not stated, 9 cases.

THURSDAY—MORNING SESSION.

DR. FREDERICK P. HENRY, of Philadelphia, read a paper on the

RELATION BETWEEN CHLOROSIS, SIMPLE ANÆMIA AND PERNICIOUS ANÆMIA.

The discussion of the relation between chlorosis, simple anæmia, pernicious anæmia, etc., may be divided into three heads: 1. Are they separate diseases? 2. Are they of kindred nature? 3. Are they different stages of one affection? Pernicious anæmia is first considered, because the determination of its status is of fundamental importance. It is admitted by all that the clinical features of this disease are common to a number of affections, especially cancer and atrophy of gastric glands; but those who argue most forcibly in favor of its independent nature exclude from the category of pernicious anæmia all cases in which an anatomical lesion of any organ is found. This appears to me unscientific, for an independent disease is one which rests upon a constant anatomical basis or is invariably produced by the same specific agent. Hunter has endeavored to establish pernicious anæmia as an independent disease by the demonstration of an excess of iron in the liver in cases of that affection. He regards this as the essential anatomical feature of pernicious anæmia. The work of Hunter is of great value, and certainly demonstrates the existence of an excessive hæmolytic process in that disease. In my opinion, however, this excessive hæmolytic process is a consequence of defective hæmogenesis, for certain facts show the red corpuscles of pernicious anæmia to be abnormally weak and perishable. Chlorosis is universally admitted to be due to defective hæmogenesis, and, therefore, I regard it and pernicious anæmia as closely related affections. Transitions from the one affection to the other have also been observed by myself and others.

Conclusions: (1) That pernicious anæmia is a process, not a disease; (2) that it is closely related to chlorosis; (3) that it may be the terminal stage of other diseases, and especially of cancer of the stomach and atrophy of the gastric glands.

Leucocythæmia and Hodgkin's disease, in that

they are always associated with lesions of the blood-making organs—spleen, lymph glands, bone marrow, etc.—are independent diseases, or rather, different stages of the same disease, for several cases are recorded in which an undoubted transition from one to the other has been observed.

DR. F. FORCHEIMER, of Cincinnati, read a paper on

THE RELATIONS OF ANÆMIA TO CHLOROSIS.

He referred to the confusion which existed in regard to the definition of the two diseases. Immermann says that we are justified in stating that anæmia is that condition in which there is a diminution of red corpuscles as well as of the albumens of the plasma in the blood (hypalbuminosis). Strümpell considers that "the essential element in anæmia is therefore a diminution in the number of red corpuscles or so-called oligocythæmia," and states further that "oligocythæmia is not invariably accompanied by a diminution in the amount of serum albumen (by which means plasma-hypalbuminosis)." Going on it is found that anæmia or oligæmia vera really means a diminution of the whole quantity of the blood, and that this condition can be divided into hydræmia, oligocythæmia, oligæmia sivea and oligæmia hypalbuminosa. We have three representative definitions; the one broad and general, including a diminution of any one or all of the constituents of the blood; a second, in which hypalbuminosis and oligocythæmia are the principal if not the only factors; and a third which makes oligocythæmia alone the characteristic feature. From a purely practical standpoint the latter seems the best.

The same confusion in regard to definition is met with in a consideration of chlorosis. Duncan (1867) was, however, probably the first to make the distinctive feature, oligochromæmia, characteristic for chlorosis—that is, in chlorosis we find the individual red corpuscle deficient in hæmoglobin. Unfortunately for this definition the term chlorosis is to be looked upon as an essentially clinical one; it is not going too far to state that by far the great majority of reported cases of chlorosis are not chlorosis at all. Another difficulty is that both oligocythæmia and oligochromæmia may occur in the same individual, so that the term chloranæmia is justified by observation of existing conditions. It is more than probable that anæmia is a forerunner of chlorosis in a great many instances, and possibly a number of cases occur in which there is a combination of both conditions.

Almost any cause put down for anæmia will hold good for chlorosis. Sex, age, a peculiar composition of the blood and certain vascular anomalies are held to be especially characteristic for chlorosis. The two latter are the only ones to be found in chlorosis. The process of sexual

development is looked to as the time of most common occurrence of chlorosis. This age also produces a great number of cases of anæmia, but children and old people are subject to anæmia and practically excluded from chlorosis. The greatest number of cases occur between the ages of 15 and 25 years, decidedly after the time of first menstruation. Furthermore, an anæmic constitution is a strong predisposing cause for chlorosis.

The clinical characteristic of chlorosis lies in the peculiar changes in the blood. In anæmia the red corpuscles as well as the albumens of the plasma are reduced in quantity, and frequently there is production of a greater number of smaller corpuscles (microcytes). As a result of the reduction of the number of red corpuscles the hæmoglobin is correspondingly reduced in quantity. In pure chlorosis the number of red corpuscles is not diminished and a tendency to the production of larger red corpuscles (megalocytes) is especially well marked. These changes are, however, not sufficiently characteristic to establish a diagnosis. It is also found that the proportion of hæmoglobin in each corpuscle is diminished. It has been said that in anæmia there is always hypalbuminosis, while in chlorosis this is absent, but this has not yet been positively proven.

One respect in which chlorosis is said to differ materially if not absolutely from anæmia consists in the pathological changes, first described by Virchow. These are narrowing of the lumen of the aorta and larger arteries as well as thinning of their walls. The heart is sometimes small, sometimes hypertrophied. This view would permit us to state that chlorosis is always congenital, in some cases latent for years, while anæmia in most cases is acquired. Many objections have been urged against this view.

The relation of the symptoms of anæmia to chlorosis depends upon the conditions of the blood and the anatomical substrata. Given a case of anæmia in which there is only a reduction of hæmoglobin as a result of oligocythæmia and a case of chlorosis in which there is a reduction of hæmoglobin as a result of oligochromæmia, and metabolism in both these cases will be approximately the same; but if in anæmia we have oligocythæmia as well as hypalbuminosis, which is said to coexist in the majority of cases, the metabolism must be different from that of a pure case of oligocythæmia. As a result of a reduction of hæmoglobin there is simply reduction in the process of oxidation; at the same time the waste products are carried off and sufficient albuminous food is carried to the tissues by the plasma of the blood, which is unchanged. Hypalbuminosis and oligocythæmia produce an entirely different result. We have the same factor, suboxidation, but we have in addition deficiency of supply. In mild cases of anæmia, there is produced a loss of

weight; in severe cases, the condition called marasmus. In chlorosis very little if any loss of weight occurs; very frequently the opposite condition is brought about by too great supply and by the presence of too much CO_2 , preventing decomposition of fats. When anæmia is associated with chlorosis, we have a very unfortunate combination, especially if there is a great amount of hypalbuminosis.

Unless we believe that the anatomical lesions of Virchow belong to chlorosis, there exists no difference between the symptoms of chlorosis and anæmia.

The therapeutic relations of the two diseases must be considered. While the indiscriminate use of iron in anæmia must be deprecated, yet upon the whole iron is just as much looked upon as a specific in anæmia as in chlorosis. Where in anæmia we try to remove the cause and institute causal treatment, we are satisfied in chlorosis with removing the symptom which is the essential of the disease. It has been repeatedly demonstrated that the removal of this essential symptom is followed temporarily by complete recovery. Whereas, in anæmia, treatment is followed by complete recovery or complete failure, iron in chlorosis will always result in amelioration, even if the tendency to relapse cannot be removed. There are few cases of chlorosis, even those with the lesions of Virchow, that are not benefited by the administration of iron in sufficient quantity. In a great many cases of anæmia, the use of iron would be followed by negative or by bad results.

DR. WILLIAM OSLER, of Baltimore, took issue with Dr. Henry in regard to chlorosis. He held that chlorosis is absolutely distinct from pernicious anæmia, for the following reasons: 1. The sex; he had never seen chlorosis in the male. 2. The pathological conditions. He regarded thus the hyperplasia of the heart and great vessels as a specific anatomical distinction of a certain number of cases. 3. The character of the blood. He considered the diminution of the percentage of hæmoglobin a distinctive feature of chlorosis. 4. Curability. Although in chlorosis there is a tendency to relapse, each given attack can be cured if sufficiently large doses of iron are employed.

DR. FRANCIS P. KINNICUTT, of New York, agreed as to the lack of relation between chlorosis and pernicious anæmia. He had never seen true chlorosis in the male. All his cases of pernicious anæmia, on the other hand, with one or two exceptions, had occurred in males. He agreed with Dr. Henry in regard to the relationship between Hodgkin's disease and true leukæmia.

DR. W. W. JOHNSTON, of Washington, thought that a study of certain anæmias which are met with in women will throw light upon the association of anæmia with diseases of the intestinal glands and gastric tubules. The explanation of

the chronic anæmias of parturition is probably the continued pressure upon the intestinal tube, causing a long starvation lasting nearly a year. This seems to produce an actual organic change in the intestinal glands. Several illustrative cases were cited.

DR. WILLIAM PEPPER, of Philadelphia, agreed with Dr. Osler in regard to the relation between true anæmia and chlorosis and progressive pernicious anæmia, so called. He was not prepared to admit the analogy between true chlorosis and progressive pernicious anæmia. The conditions of the blood are widely antagonistic in these two affections. The clinical differences are also very marked. In the present state of knowledge it is probably wiser to consider essential anæmia as an independent affection.

DR. FREDERICK P. HENRY, of Philadelphia, thought that the definition of chlorosis given by Dr. Osler could not be maintained; that is, there is always a diminution of hæmoglobin, with a nearly normal number of red corpuscles. The arguments that he had advanced were based entirely upon personal observations. While chlorosis is readily relieved by treatment in the early stages, yet, if it is neglected, the chlorosis may become more intense and may present the appearances of pernicious anæmia.

DR. S. WEIR MITCHELL, of Philadelphia, read a paper on

SUBJECTIVE FALSE SENSATION OF COLD, CONSIDERED AS A SYMPTOM.

The speaker had met with many cases where a feeling of cold is complained of in members which do not present any objective changes in temperature. These may be placed in three classes: 1. Those due to a central cause. 2. Those due to neuritis. 3. Those whose origin is at present inexplicable or due to hysteria. A number of cases exhibiting this symptom to an extreme degree were reported. In the first case a marked sensation of cold involving the left side of the body followed an injury to the head. Three or four cases were referred to coming in the second class. The sensation of cold involved the posterior part of the legs, the back or buttocks. In all these cases there was either neuritis at the time or it developed subsequently. When this symptom is noted neuritis may be expected. Two cases belonging to the third group were described. One was an elderly individual with no signs of hysteria; the other was a case of young woman with marked hysterical symptoms.

DR. G. M. GARLAND, of Boston, read a paper on

GASTRIC NEURASTHENIA.

Three cases of vomitus nervosus were reported:

Case 1.—Miss S. began at the age of 2 years to have sudden attacks of vomiting. These recurred at irregular intervals until the time of her death.

The attacks lasted twenty-four hours and it required a week for the child to recover her strength. At the age of 20 she began to have excessive muscular twitchings with the attacks. Two years later she began to have severe headaches. These gradually merged into one steady ache. January 2, 1884, the author saw the patient suffering from intense headache and slight twitching of arms and legs. Vomiting appeared the next day, causing intense burning of the throat from the intensely acid character of the matter vomited. After four days she gradually improved and entirely recovered. November 12, 1884, the patient was again seized with headache. November 15th vomiting and twitching began. She gradually improved until December 2d, when all the symptoms returned and continued until her death, December 13th. Urine was normal until a few days before death, when it contained a trace of albumin, but no casts. At the autopsy no marked organic change was found in any part of the body.

Case 2.—Miss S., 22 years old, first seen September 19, 1888. She was in bed with headache, poor appetite, constipation and weakness. Pulse, temperature and urine normal. Some nausea. Vomiting appeared in a few days. She was fed exclusively by the rectum for three weeks, but the vomiting persisted and there was severe burning along the entire œsophagus. At times the urine was scanty, but never contained albumen. She gradually improved, but is not as strong as before her illness.

Case 3.—Miss D., aged 43 years, had been subject to bilious headaches. During the summer of 1888 she had a severe attack of vomiting and she was very ill for several weeks. During the following September, as a result of anxiety, the appetite left her and the nausea returned. She, however, did not vomit.

AFTERNOON SESSION.

DR. JOHN H. MUSSER, of Philadelphia, read a paper on

PRIMARY CANCER OF THE GALL BLADDER AND DUCTS.

The speaker, after describing two cases of this affection that had come under his observation, reviewed the cases that had been reported and presented the following conclusions:

Primary cancer of the gall bladder is not so rare as is generally believed. It occurs in the female nearly three times as often as in the male. A large number (57 per cent.) of the cases occur under the age of 60. Gall stones are an exciting cause, especially in persons predisposed to the affection. The organ is generally not much enlarged save as the result of secondary processes. Metastasis is not widespread. By continuity of structure neighboring organs are involved. Ad-

hesions to adjacent organs with ulceration and perforation are not uncommon. Pain, jaundice and the presence of a tumor are the most common phenomena. With them are associated anæmia, cachexia, vomiting, constipation or diarrhœa and ascites. Pain was present in 62 per cent. of the cases, at first ill-defined, then becoming localized to the right hypochondrium and lancinating in character. Jaundice was present in 69 per cent., gradually increasing in degree. In some cases, however, it was intermittent. Tumor was noted in 63 per cent. The tumor was hard, firm, painful, and generally movable with respiration. The progress of the disease is always continuous. Some extraordinary cases are reported in which there was temporary cessation in the progress of the disease. Death results from exhaustion; frequently from peritonitis. In some cases from metastasis to other organs; in some from biliary obstruction. In eight cases death was due to cholæmia. The duration of the disease is short, the average being six and two-thirds months. The progress is rapid after complete occlusion of the biliary passages or evidence of inflammation of the biliary passages has developed.

DR. HENRY FORMAD, of Philadelphia, read a paper on *The Anatomical and Physiological Relations of Lesions of the Heart and Kidneys*. The paper was based upon the post-mortem study of 300 cases observed in public and private practice.

DR. P. G. ROBINSON, of St. Louis, read a paper on

THE CONTAGIUM OF DIPHTHERIA.

Diphtheria is an acute infectious disease, doubtless due to a living organism (microbe) the exact identity of which cannot yet be regarded as settled.

Primarily a local affection, the system becomes secondarily and generally infected through absorption of a poison generated at the primary and localized seat of inoculation.

The modes of infection are numerous, the contagium being directly transferred by contact, in a dry state through the air for limited distances, in foul clothing, in polluted food and drink, milk probably being a prolific source of infection.

The most difficult problem to solve is that which relates to the conditions most favorable to the growth and development of the germs and the propagation of the disease.

While, strictly speaking, diphtheria can hardly be called a filth disease, since it prevails often to a very limited extent in those localities whose hygienic surroundings are apparently the worst, yet certain kinds of filthy accumulations, as the ordure of animals, notably the refuse from cowsheds and dairies, seem to furnish the most favorable conditions for the culture of this particular germ.

Until this problem can be solved and the life history and habitat of the diphtheritic germ is understood, no definite plan can be formulated

for the arrest of the contagium nor for the hopeful treatment of the disease.

FRIDAY MORNING.

The following officers were elected: President, Dr. S. C. Busey, Washington; 1st Vice-President, Dr. Wm. Pepper, Philadelphia; 2nd Vice-President, Dr. Henry M. Lyman, Chicago; Recorder, Dr. I. Minis Hays, Philadelphia; Secretary, Dr. Henry Hun, Albany; Treasurer, Dr. W. W. Johnston, Washington; Member of Council, Dr. G. Baumgarten, St. Louis; Representative on Executive Committee of Congress of American Physicians and Surgeons, Dr. Wm. Pepper, Philadelphia.

The following members were elected: Drs. Wm. G. Thompson, Wm. H. Thomson, J. West Roosevelt, New York; Charles Carey, Charles G. Stockton, Buffalo; Victor C. Vaughn, Heneage Gibbes, Ann Arbor; Charles W. Purdy, Chicago; Starling Loving, Columbus, O.; W. H. Geddings, Aikens, S. C.; Wm. C. Dabney, Charlottesville, Va.; B. F. Westbrook, Brooklyn, and Henry P. Walcott, Cambridge, Mass.

The date of the next meeting to be between May 20 and June 15, 1890.

DR. JAMES J. PUTNAM, of Boston, read a paper entitled

A SUPPLEMENTARY INQUIRY INTO THE FREQUENCY WITH WHICH LEAD IS FOUND IN THE URINE.

The paper embodied further researches as to the frequency with which traces of lead are found in the urine of persons in good health, or not presenting the classical symptoms of lead poisoning; and discussed the propriety of enlarging our clinical conception of that disease. A table was shown in which the results of the present investigation were combined with those reported upon two years ago, which may be summarized as follows: The urines of 68 persons, either presenting no symptoms (healthy medical students) or only symptoms of specific or local disease (phthisis, pleurisy, local injuries, etc.) were found by Dr. A. M. Comey and Dr. C. R. Worcester, to contain lead in the proportion of about 17 per cent.; while those of another group of 125 persons, presenting various symptoms of disease, such as it was thought might possibly be due in part to lead poisoning, contained lead in the proportion of 50 per cent. The largest sub-group of this latter class embraced 36 cases, not strictly homogeneous, but made up of chronic or sub-chronic affections of the spinal cord and peripheral nerves. One (typical) fatal case of this sub-group was analyzed at some length, and the results of the microscopic examination of the spinal cord and nerves were reported upon. The case was that of a carriage painter, who suffered for some years with progressive anæmia and general emaciation, and for the two years preceding his

death with weakness, paræsthesia and impairment of sensibility with exaggerated tendon reflexes and extensor spasms, increasing finally to complete paraplegia. Lead had been found in the urine three times, but the patient had never presented "a blue line," characteristic of paralysis, encephalopathic symptoms, or colic, though the bowels had been obstinately constipated for years. The morbid changes found after death, besides the signs of general anæmia, were those of combined antero-posterior and lateral sclerosis of the cord, on which at the last, a subacute process of diffuse destructive softening had engrafted itself.

This latter process, which was characterized by the presence of a dense infiltration of granule cells and by a breaking down of the nerve tubes, so as to form round or oval cavities, such as have often been described, extended throughout the length of the cord, occupying the position of the sclerosed system traits of the adjoining tissue. The nerve roots were effected though to a less degree than the cord; the posterior much more than the anterior. The acuter process was at its height in the dorsal region. The gray matter was also affected, apparently in proportion to the severity of the secondary acute change, *i. e.*, most severely in the dorsal region. The smaller arteries were here and there thickened. The peripheral nerves were degenerated, but only to a moderate degree.

It was not assumed that these changes in the cord were due to lead as a specific poison, though at the same time the evidence is that such myelitic changes as lead does set up are diffuse in character and not coördinated with the typical peripheral nerve degeneration. It was, however, thought more probable, in view of the circumstances under which such pathological processes had been seen in other cases, that the lead acted, if at all, by inducing a general and—through the thickening of the vessels—a local anæmia, thus intensifying the effects of other influences, of which one might be an hereditary tendency.

Another case was cited to show that lead in drinking water may cause outbreaks of acute indigestion in children, while other children exposed to the same influence may be wholly unaffected.

A number of observations made on Boston drinking water by Dr. E. M. Greene were reported, showing the frequency with which lead is present and the length of time required to wholly rid a pipe of its presence.

DR. HAROLD C. ERNST, of Jamaica Plains, Mass., read a paper entitled

HOW FAR MAY A COW BE TUBERCULOUS BEFORE THE MILK BECOMES DANGEROUS AS A FOOD SUPPLY?

The observations which he reported were made at the instance of the Massachusetts Society for

the Promotion of Agriculture. The surroundings of the animals used were prepared in the most careful manner. One hundred and fourteen samples of milk were examined for the bacillus. These were obtained from thirty-six cows suffering with tuberculosis of some organ other than the udder. Seventeen samples were found to contain tubercle bacilli. These seventeen specimens came from ten cows. The cream was found to contain bacilli as often as the milk. The bacilli were present with a fair degree of constancy.

Well animals were then inoculated with the result of inducing the disease in 50 per cent. of the cases treated. Feeding experiments were also made with the result of inducing the disease in a number of calves and young pigs. The following conclusions were presented: 1, and emphatically, that milk from cows affected with tuberculosis in any part of the body may contain the virus of the disease. 2. That the virus is present whether there is disease of the udder or not. 3. That there is no ground for the assertion that there must be a lesion of the udder before the milk can contain the infection of tuberculosis. 4. That, on the contrary, the bacilli of tuberculosis are present and active in a very large proportion of cases in the milk of cows affected with tuberculosis, but with no discoverable lesion of the udder.

DR. E. L. TRUDEAU, of Saranac Lake, read a paper on

HOT AIR INHALATIONS IN PULMONARY TUBERCULOSIS.

The paper presented a brief clinical history of four cases treated during periods varying from one to four months by Weigert's method. This was considered as secondary and only as a basis for the bacteriological study which is left to answer the claim of specificity made for the method. The question to be answered is whether breathing of hot air can prevent the growth of the tubercle bacillus in the lungs of living individuals. The clinical evidence obtained brings out no positive proof in favor of the treatment. From the bacteriological research the following notes are made: In all the cases the bacillus which was present before the treatment remained in the sputum, and no effect was produced upon that important element of the disease. The claim of diminished virulence was tested by inoculations made on rabbits before, during and after the treatment. The sputum of one of the patients who improved was found, fifteen weeks after the uninterrupted daily breathing of hot air, to produce tuberculosis in the animals injected as promptly, and to a similar extent, as that injected before the treatment had been instituted.

Conclusions:—1. The therapeutic value of hot air inhalations in phthisis is doubtful. 2. The evidence obtained by bacteriological study of the

cases recorded does not confirm the assumption that inhalations of heated air can either prevent the growth of the tubercle bacillus in the lungs of living individuals, or diminish the virulence of this microbe when it has gained access to them.

NECROLOGY.

Dr. Addinell Hewson.

DR. ADDINELL HEWSON, of Philadelphia, a member of the Association in 1855, died September 11, in his 66th year. He was descended by a medical line of ancestry, being the fourth in descent from an eminent London surgeon. He was carefully educated at home, and at Dublin, after taking his medical degree at Jefferson College, which was in 1850. He was eminent in surgery as well as editorial and literary work. He was appointed visiting surgeon to the Pennsylvania hospital in 1861.

Ex-Surgeon General Joseph Beale.

EX-SURGEON GENERAL JOSEPH BEALE, with relative rank of Commodore U. S. N., died on the 24th ult., at his residence in Philadelphia. Dr. Beale was born December 30, 1814, and received his classical and medical education in the University of Pennsylvania, from which institution he graduated in 1836. He practiced his profession for one year, at the end of which period he entered the United States navy as Assistant Surgeon, and afterward rose to the position of Surgeon General of the navy, to which he was appointed in December, 1873. He was placed on the retired list in 1876.

Dr. S. O. Habershon.

DR. S. O. HABERSHON, the well-known English medical author, died in London, on the 22d ult., at the age of 64 years. His books on the diseases of the abdomen, passed through several editions, of which two appeared in this country. He was senior physician to Guy's hospital. He was a philanthropist and prominent in religious undertakings.

Deaths of Eminent Foreign Medical Men.

The Lancet announces the death of the following eminent foreign medical men: Dr. Jacobson, professor of chemistry in the University of Rostock; Dr. Anthon Geuter, professor of chemistry in the University of Jena; Dr. Anton Nuhn, honorary professor of anatomy in the University of Heidelberg; Dr. Josey Tieftrunk, of Prague, formerly body physician to the Emperor of Aus-

tria; Dr. Franz Hellwig, the botanist attached to the German New Guinea expedition, and Dr. Wasseige, professor of midwifery in the University of Liege.

MISCELLANY.

THE AMERICAN PUBLIC HEALTH ASSOCIATION.—We again call attention to the meeting of this Association, which will convene at Brooklyn Institute, Washington and Concord streets, Brooklyn, October 22, 23, 24, 25. Hon. Alfred C. Chapin, Mayor, will deliver the Address of Welcome on behalf of the city. That on behalf of the medical profession will be delivered by Dr. Alexander Hutchins. The topics to be considered are as follows:

1. The Causes and Prevention of Infant Mortality.
2. Railway Sanitation (heating, ventilation, water supply, water-closets, carrying of passengers with infectious diseases).
3. Steam-ship Sanitation.
4. Methods of Scientific Cooking.
5. Yellow Fever (unprotected avenues, local protection, the proper procedure of local health authorities in case of an outbreak of yellow fever).
6. The Prevention and Restriction of Tuberculosis in Man.
7. Methods of Prevention of Diphtheria, with Results of such Methods.
8. How far should Health Authorities be Permitted to Apply known Preventive Methods for the Control of Diphtheria?
9. Compulsory Vaccination.
10. Sanitation of Asylums, Jails and other Eleemosynary Institutions.

THE INTERNATIONAL DENTAL CONGRESS.—Drs. E. B. Ward and J. A. Swasey, delegates from Chicago to the International Dental Congress at Paris, have returned, and say it is a certainty that the meeting of the Congress in 1892 will be held in Chicago. A letter from Mayor Cregier inviting the Congress to come to Chicago, and one from Ferd Peck, tendering the auditorium hall, were presented to the Congress and met a cordial reception, particularly from the French delegates. Dr. Ward says the belief was quite general among the delegates that the world's fair would be held in Chicago in 1892, and they favored holding the International Dental Congress here at the same time.

GERMAN CODE OF ETHICS.—At the seventeenth Congress of German physicians held recently at Brunswick, the following resolutions were passed:

1. Every kind of public laudation, whether it proceeds from the physician in question himself or from others, and continued advertising in public papers are to be reprobated.
2. The designation "specialist," for puffing purposes, is to be reprobated.
3. The public offering of medical assistance gratis, underbidding in concluding contracts in sick societies and the like, offering advantages of any kind to a third person in order to procure practice, are inadmissible. The designations "klinik" and "poliklinik" (hospital) belong exclusively to institutions which serve the purpose of instruction in connection with universities.
4. The ordering and recommending of secret remedies are inadmissible.
5. Any attempt of any kind on the part of a physician to intrude upon the practice of another is dishonorable, especially in the case of one who has acted as substitute or in consultation. A practitioner must by no means undertake the treatment of a case without the ex-

press consent of the previous physician. A specialist called in for a definite part of the treatment must strictly confine himself to that.

6. No physician is at liberty to make disparaging remarks to others about another physician.

TRI-STATE MEDICAL ASSOCIATION.—The following papers have been promised for the meeting of the Tri-State Medical Association:

"Demonstrations with the Microscope," Prof. James A. Reeves, Chattanooga. "Stricture," Prof. Daniel H. Howell, Atlanta, Ga. "A Case of Typhoid Fever with Subnormal Temperature and Subnormal Pulse," Dr. A. S. Wiltse, Kismet, Tenn. "A Plea for the Medical Education of Females," Dr. Chas. P. Gordon, Dalton, Ga. "Choleo Cystotomy, with a Case," Dr. E. E. Kerr, Chattanooga. Report of a Case, Dr. Wm. T. Blackford, Graysville, Ga. "Physiology of the Heart and its Valves," Dr. W. L. Gahagan, Chattanooga. "Relation of the Specialist to the General Practitioner," Dr. F. W. Skillern, Pikeville, Tenn. "Some Points in the Diagnosis of Skin Diseases," Prof. E. A. Cobleigh, Chattanooga. "Imaginary Foreign Bodies in the Throat," Dr. Max Thorner, Cincinnati, O. "Antiseptic Midwifery," Prof. F. W. McRae, Atlanta, Ga. Other papers of interest will be presented.

Prof. Robert Battey, of Rome, Ga., has promised to be present.

This meeting will be held in response to the following call issued by a number of societies in Alabama, Georgia and Tennessee:

"The members of the medical profession in Alabama, Georgia and Tennessee are requested to meet in Chattanooga on the third Tuesday in October, for the purpose of forming a Tri-State Medical Association. All will be admitted to the meeting of the Association, but the membership will be restricted to graduates of regular medical colleges in good standing."

A Constitution will be adopted at this meeting which will regulate all matters pertaining to the society. The meeting will be called to order at 10 A.M. Tuesday, Oct. 15th, at the Chamber of Commerce. The sessions will continue two days.

FRANK TRESTER SMITH, M.D.,
Secretary of Committee.

IS LEPROSY HEREDITARY?—ORTMANN (*Archiv f. Derm. und Syph.*) gives a concise abstract of a paper by Dr. Amanuel Hansen, in which the author gives the result of an interesting investigation. He went to America to visit the lepers who had emigrated from Norway, and examined in the States of Wisconsin, Minnesota and Dakota lepers who had originally left Norway and their descendants born in America. He arrived at the interesting result that of 160 lepers who had emigrated to America, the offspring had remained free to the third generation. This result shows emphatically that leprosy is not a hereditary disease. The fact that, of the 160 emigrants, only sixteen or seventeen are still alive without any new case having sprung up does not, in his view, show that leprosy is not contagious. The different mode of life in the new country does not afford the same opportunity of contagion that is given by the peculiar conditions of life in Norway.

LETTERS RECEIVED.

Dr. Dudley P. Allen, Cleveland, O.; Dr. Geo. E. Fell, Buffalo, N. Y.; Dr. Perry H. Millard, St. Paul, Minn.; Druggists' Directory, Boston; Dr. I. W. M. Gartury, Stockton, Cal.; Ketteridge & Moran, Ann Arbor, Mich.; Dr. Edward F. Wells, Shelbyville, Ind.; Dr. H. C. Jones, Maroa, Ill.; Dr. John M. West, Philadelphia; Woman's Medical College, Dr. C. H. Knight, New York; Dr. J. W. Selman, Greenfield, Ind.; Dr. O. E. Abel, Winchester, Ind.; Dr. M. H. Fletcher, Cincinnati, O.; W. P. Cleary, New York; Reed & Carnrick, New York; Dr. J. H. Bry-

an, Washington; Dr. M. G. Kolb, Cleveland, O.; Dr. G. B. French, Cedar Rapids, Ia.; Dr. F. A. Weir, Jesup, Ia.; Dr. E. A. Holmes, North St. Paul, Minn.; Dr. C. A. Freeman, Chicago; Dr. Robert T. Morris, New York; Cincinnati Polyclinic, Cincinnati, O.; Dr. J. A. Larrabee, Louisville, Ky.; S. H. Parvin's Sons, Cincinnati, O.; Battle & Co., St. Louis, Mo.; Dr. A. K. Harrison, Columbus, Tex.; Dr. Arthur B. Coffin, Boston; Dr. J. H. Davisson, Los Angeles, Cal.; Dr. A. L. Hummel, Philadelphia; Dr. Wm. B. Atkinson, Philadelphia; Dr. Chas. C. Browning, Adrian, Ill.; Dr. Richard J. Daughlison, Philadelphia; Dr. H. D. Nicoll, New York; The Bancroft Co., San Francisco, Cal.; Hammond Typewriter Co., New York; Dr. John A. Robison, Chicago; J. Walter Thompson, New York; Albany Medical College, Albany, N. Y.; Bellevue Hospital Medical College, New York; Surgeon-General John B. Hamilton, Washington; Geo. P. Rowell & Co., New York; Dr. E. R. Palmer, Louisville, Ky.; Dr. E. G. Cochran, Chihuahua, Mexico; Dr. E. von Denhoff, Louisville, Ky.; Dr. F. Koeller, Pittsburgh, Pa.; Dr. A. E. Prince, Jacksonville, Ill.; Niagara University, Buffalo, N. Y.; Dr. C. C. Hunt, Dixon, Ill.; College of Physician and Surgeons, Chicago; J. H. Chambers & Co., St. Louis, Mo.; J. H. Bates, New York; Prof. Dr. H. Dor, Lyons, France; Dr. A. Hanson, Paulina, Ia.; Miss N. J. Newcomer, Indianapolis, Ind.; Dr. Jesse Hawes, Greeley, Col.; Dr. John M. West, Philadelphia; Dr. Chas. T. Disen, Minneapolis, Minn.; Dr. A. H. Hunt, Wooster, O.; Ward Bros., Jacksonville, Ill.; Dr. Ed. A. Pennock, Chartram, Pa.; Thos. Leeming & Co., New York; Dr. A. Vande Veer, Albany, N. Y.; Dr. Frank Trester Smith, Chattanooga, Tenn.; Miner & Elberg, Indianapolis, Ind.; Dauchy & Co., New York; Dr. C. F. Folley, Breckenridge, Minn.; Dr. C. L. Ford, Ann Arbor, Mich.; Dr. Thos. W. Kay, Scranton, Pa.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from September 21, 1889, to September 27, 1889.

By direction of the acting Secretary of War, Major Geo. M. Steruberg, Surgeon, having completed the duties assigned him in War Department order dated February 4, 1889, S. O. 30, February 5, A. G. O., is reassigned to duty as attending surgeon and examiner of recruits at Baltimore, Md. Par. 12, S. O. 218, A. G. O., September 19, 1889.

By direction of the Secretary of War, the station of Major Leonard Y. Loring, Surgeon, is changed from Ft. Mojave, Ariz. Terr., to Ft. Wingate, N. M., and he will report for duty at the latter accordingly. Par. 7, S. O. 219, A. G. O., September 20, 1889.

By direction of the Secretary of War, Capt. Henry G. Burton, Asst. Surgeon, will report in person, on the expiration of his present sick leave of absence, to the commanding officer, David's Island, New York for temporary duty at that station, and by letter to the Superintendent recruiting service. Par. 3, S. O. 223, A. G. O., Washington, September 25, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending September 28, 1889.

Medical Director A. C. Gorgas, detached from examining board and to hospital, Philadelphia, Pa.

Medical Director W. T. Hord, detached from hospital, Philadelphia, Pa., and wait orders.

Medical Inspector E. S. Bogert, detached from Newport Navy Yard and to examining board.

Surgeon D. McMurtrie, detached from U. S. S. "Vermont" and to Navy Yard, New York.

Surgeon H. J. Babin, ordered to the receiving ship "Vermont."

P. A. Surgeon C. H. H. Hall, resigned from the naval service, to take effect November 1, 1890, and resignation so accepted.

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ORIGINAL ARTICLES.

THE MANAGEMENT OF INFANTS UNDER A YEAR OLD, HYGIENIC, DIETETIC AND MEDICINAL.

*Read in the Section of Diseases of Children at the Fortieth Annual Meeting of the American Medical Association,
June, 1889.*

BY F. B. GREENLEY, M.D.,
OF WEST POINT, KY.

When we consider the great mortality of early childhood, compared to other periods of life, it induces inquiry on the part of sanitarians and clinicians as well as philanthropists to endeavor to ascertain why it is so. In this country the death-rate of infants under one year is 60 per cent. of all who die under five years.¹ This is a very astounding fact and greatly calculated to arouse the sympathy and interest of all good men.

We know that this great mortality cannot be due altogether to natural or unavoidable causes, and therefore it behooves all workers in the medical profession as well as philanthropists to investigate the causes and, to the best of their ability, mitigate as much as possible such a dire calamity.

The question may arise in the minds of some, why is it that the young of the inferior animals are not subject, to some extent, to disease and death, like our infants? Can it be that they take better care of their young; that they have better ventilation; that the mammifera afford a better milk supply; that they better protect them from violence? Is civilization one of the factors detrimental to infant life? Can it be that we, more than the brute creation, violate the laws of health and cleanliness to such an extent as to procreate weakly and diseased offspring?

In discussing the subject before us I shall very cursorily speak of (1) the mortality, (2) the hygiene of infancy, (3) the proper food for infants, and (4) allude to some of the diseases incidental to that period of life. There can be but little doubt that a large proportion of infantile mortality is due to improper food, or, more correctly speaking, the want of proper food and unsanitary surroundings. A very large percentage of the mortality of infants during the first year occurs

during the first month and greatly diminishes as age advances.

In France, out of 1,000,000 births over 29,000 die the first week, 22,000 the second week, and 22,000 in the sixteen days following, showing a mortality during the first month of 10.36. The annual rate of mortality among infants aged one month and under one year does not exceed 114.6 per 1,000, whereas among infants from birth to one year of age it is equal to 165.6.² In a supplement to the twenty-fifth report of the Registrar-General of England, 1838 to 1854, we find a table of annual rate of mortality, per cent., at each month under one year of age. During the first month 57 per cent. die; second month, 21.80 per cent.; third month, 15.70 per cent., and so on, rapidly decreasing as age increases. To those unfamiliar with such statistics this would seem astounding.

These statistics should remind us that there are causes producing such terrible mortality aside from disease. No doubt many children die in the first month from congenital causes due to disease of their parents; and, on the other hand, many die from neglect, starvation and exposure, and some from infanticide, while many die from the effects of improper food. Now, after considering the great mortality of infancy during the first year, the question is strongly presented to us, what can we do as sanitarians, philanthropists and medical men to modify or curtail it? Can we do anything? The solution to these questions consists mainly in endeavoring to ascertain the causes underlying such a terrible death-rate, and, to the best of our abilities, remove them.

We have already intimated that, to a great extent, improper food was a prominent factor in this respect, as well as exposure, neglect, starvation and infanticide. If we visit localities of the poor in large cities, where squalor, filth and degradation prevail over everything else in the way of cleanliness and good morals, we can to some extent account for the excessive death-rate of infants recorded in most of our large cities.

Now, what can be done to ameliorate the condition of the indigent poor who crowd the alleys and cellars of our cities? We are familiar, to a great extent, with the cause of a great deal of

¹ Vital statistics, U. S. census 1880.

² British Medical Journal, June 12, 1875.

poverty existing in such localities. I allude to the excessive use of alcoholic liquors. This is one cause we cannot remove outside of legislative enactments; for as long as politicians rule, spirituous liquors will be for sale, no difference what the consequences may be. But from a sanitary point of view a good deal might be accomplished in such localities. It should be the duty of the sanitary officers of cities to superintend the renovating and disinfecting of such unhealthy premises, and see that ventilation and cleanliness as far as possible are secured to the families of the poor.

As to the effects of inebriation, we have but little hope of amelioration; but when it is found that children are starving, neglected or abused in any way, they should be taken from their parents and placed in charitable institutions provided for their benefit. This part of the work of saving children would mainly fall to the lot of philanthropists. It has been said by some good people that it would be as well for mankind if the children of inebriates were all to die, so that we might soon be rid of drunkenness. This idea is expressed on the hypothesis that drunkenness is hereditary from parent to child. Regarding this as being true, of which there is little doubt, the proposition would not destroy the habit, as, unfortunately, many young men and boys acquire it from force of association and imitation. The idea may have originated from the theory of scientists that it would be in accordance with the law of survival of the fittest.

There is another cause in force which destroys the lives of many infants. I allude to syphilis. We have no idea of the great mortality resulting from this cause unless we examine the register of hospitals for infants. Most all children inheriting this disease die before they are a year old, and a large majority perish during the first two months. Now, can we do anything to diminish this mortuary record?

As a large majority of these children are born in cities, something, perhaps, might be done in the way of stamping out the disease. Several years ago the plan of licensing and inspection was tried in St. Louis, and it was said by Dr. Bernard, who was supervisor of inspection, that during its existence it curtailed the disease about 40 per cent. But the law was short-lived, as it was so repugnant to the minds of the religious element of the population that they soon rebelled against it, and it was abolished. They seemed to be actuated by the principle that, although it may be understood that moral disease exists among us, we must not acknowledge it openly. The St. Louis law was that every house of ill-repute was granted a license, and, on inspection, every inmate who was not diseased was granted a certificate of health, and those who were found to be diseased were refused a certificate. Now

the question arises, was there not an element in this law lacking, as far as it respects stamping out the disease? It should have been fuller in its provisions. Every woman found with the disease should have been put in a hospital for the treatment of syphilis.

It was the licensing part of the law that the religious part of the population complained of, which could have been left out. There is but little doubt that inspection comes the nearest of any means we possess, added to confinement in hospital until well, that promises to stamp out the disease or greatly limit its present extent. It may be said, in this regard, that many places of a private character would be overlooked, but by strict surveillance of proper officers all such houses of resort would finally be discovered. It is impossible to ignore the existence of such an evil. We have had it among us for centuries, and if it is the result of super-civilization, so much the worse for humanity. I think it must be evident to the minds of all observers that if syphilis and alcoholism could be eliminated from the world, the death-rate of the race would be wonderfully abridged; and if by any means possible such a utopian condition of the world could be brought about, the millenium would be near at hand and humanity would rise up as one man and pronounce the authors of such results the great benefactors of their race.

As for the filthy condition of the streets, as before remarked, where the poorer classes congregate, as well as the unventilated tenement houses are concerned, much could be done by the proper surveillance of the health officers. It must be patent to the observation, at least of all medical men, that it is in such localities where epidemic diseases find their greatest number of victims. The construction of tenement houses, as it regards drainage and ventilation, should be under the supervision of a health officer. All such things as these can be regulated by municipal authority. The women living in such unhealthy localities cannot be in good health themselves, and, consequently, their offspring will be affected thereby; and in many instances the infants, to start on, are independent of hereditary diseases, anæmic, or possessed with very feeble constitutions, added to these impoverished milk and unsanitary surroundings. These are common causes of mortality among infants. In such places as these we find overwork and the want of proper nourishing food on the part of the mother as the causes of bad health and death among infants; while in higher life, among fashionable women, other causes militate against infantile health and life. Here we find imprudence in dress, inactive life, late hours and irregular habits, producing impaired appetite and digestion, and, consequently, a poorly nourished embryo. And after birth the little impoverished waif, on account of the

fashionable tenets of the mother, is greatly neglected, perhaps committed to the care of a careless and incompetent nurse; and if the little thing dies it is recorded in the mortuary list as having died of inanition, when really it was from neglect and starvation.

Can anything be done that will work a favorable change in this particular? It is feared the world will be compelled to wait an indefinite time, at least until common sense and proper maternal instinct resume, to some extent, their ancient domain. Fortunately these unnatural habits and lack of philo-progenitiveness are confined, comparatively speaking, to but a small portion of our population. In order to make a comparison between the offspring of such parents and that of those who observe regular habits, take due amount of exercise and observe the proper maternal care of their infants, we have only to note the contrast presented between the two classes of children. If we go into the country we commonly see not only large families of children, but stout and healthy ones. Here their mothers, as a rule, observe the various means to preserve health, and furnish a healthy supply of nourishment to their offspring. Could not the profession who have charge of the fashionable portion of humanity as their clientage exert a salutary influence over them in this particular?

It is said by a late writer in this regard, that "it is a common thing to find in fashionable families but few children, hardly ever more than two to four at the highest, many having only one and a poodle dog, and some only the poodle." If they have been unfortunate enough to give birth to many children, death has claimed a majority of them through neglect, if not disease.

As the mortality of infants during the first month of life is so great, it behooves us to have special supervision over them. As far as possible a healthy, ventilated room should be chosen for the lying-in woman, the temperature of which should be kept equable at about 80° F. When the child is born it should be kept, if possible, in a temperature of 90° or 95° until it is washed and dressed, and then placed in bed alongside its mother. Many infants have perished from the effects of exposure between birth and being dressed. As soon as convenient the child should be allowed the breast, whether there is milk present or not, so that it may learn to nurse. Of course, if the breast contains no milk, which is common until the second day, the child must be fed on fresh cow's milk. After the secretion of milk is established the infant should be allowed the breast every four or five hours, or oftener if necessary. The mother should avoid taking any drugs in sufficient quantity to affect the child deleteriously. The position of the child should be changed frequently, not allowing it to remain in one position more than a few hours at a time,

say when it nurses or is fed. This is essential on account of the bones of the head not being sufficiently compact to support the gravity of the brain so as to preserve its proper shape. Many children, from inattention in this particular, have misshapen heads. When children are born in cold or changeable weather they should wear caps. Neglect in this regard frequently eventuates in cold in the head, producing discharges from the nose and ears, which not infrequently becomes chronic. An infant should not be washed all over in cold weather oftener than once a week, and then always in a temperature not less than 80° or 85° and with warm water. Care should always be observed that the flexions of the joints and the folds of skin around the neck are dusted daily with some finely prepared powder to prevent chafing, the finely prepared chalk being as good as any. An infant should not be taken out in cold weather unless well protected with heavy, warm clothing and well wrapped up. Young children are very easily impressed with cold from exposure, and on that account more liable to inflammations of the chest, brain, etc., than older children. Special supervision should be exercised over them in this particular. Close attention should be exercised over the digestive apparatus of infants, and particularly so in their early life, when deprived of the mother's milk. As a rule, a child under its mother's care, when she is in good health, needs but little outside attention; but when it is necessary to feed it on artificial food it is liable to indigestion, flatulency, colic, etc., which, if not corrected, will soon prostrate it. This is more particularly so in hot weather. This condition, in many instances, is due to the use of milk undergoing fermentation, and to neglect in properly cleansing the nursing bottle, etc. In warm weather it would be better to obtain fresh milk from the cow three times a day, and every time a bottle is used it should be thoroughly cleansed and rinsed with a warm solution of common soda and allowed to remain in the sunshine until needed for further use. A young infant fed on cow's milk should have the bottle every three or four hours, so that it will not, by becoming very hungry, take too much at a time and thereby engender indigestion and colic by over-distension of the stomach.

It is a question among the best men in the profession whether or not cow's milk should be diluted. A majority of those writing on the subject recommend dilution from one-fourth to three-fourths, according to the age of the child. As far as my observation extends, I prefer to use the milk undiluted. When we dilute cow's milk to one-fourth it requires a large quantity of it to furnish a due amount of nourishment, which, if the child takes enough, so distends the stomach as to produce colic, and if kept up sufficiently long we will have disordered digestion, diarrhœa

and colic, due to over-distension of the organ. And, on the other hand, if a sufficient amount is not taken to produce over-distension of the organ, gradual starvation will ensue.

When I promised our worthy Chairman to write this paper I consulted my friend Prof. Howe, scientist of the Louisville Polytechnic Society, in regard to milk, etc., as food for infants, the reagents necessary for digestion, etc. He kindly furnished me the following notes:

First.—The food which nature has provided for the infant is presumably the best. This consists essentially of

1. Casein—the nitrogenous food, flesh-former.
2. Sugar) the carbonaceous foods, heat and
3. Fat) force producers.
4. Salts—bone former.
5. Water.

Second.—In all foods prepared for infants the latter ingredients are present in sufficient quantity, and play not a small part either in starving the infant or impairing its power of digestion.

Third.—Casein. The casein of woman's milk is characterized by not forming a solid curd when acidified. This, among the mammalia, is said to be true only of the milk of woman and the mare. Other milks form more or less tough coagulum when acidified, and hence the infant's stomach at once assumes a condition in which the feeble digestive fluids of the infant fail to act upon them. On the other hand the casein of the milk of woman or the mare in the infant's stomach is so finely divided that it is digestible. This is a plausible reason why infants have been found to thrive better upon mare's milk than upon that of cows (carried out on a large scale in Paris), even though the proportion of its ingredients is not that of woman's milk. It has been attempted to obviate this difficulty of coagulation by diluting cow's milk (ineffectual), or by adding various farinaceous materials which are in themselves indigestible by the infant, as mentioned later.

This difficulty may be obviated by partially digesting cow's milk (peptonizing, a process which requires some considerable care), or by malting, both of which seem to render the casein of cow's milk digestible by the infant.

Fourth.—Sugar. Nature has provided for the child an animal sugar—lactose, or milk sugar, which is distinguished from all vegetable sugars by yielding, upon fermentation, lactic acid, an acid which in itself plays an important part in digestion. Milk sugar cannot safely be substituted in an infant's food by any vegetable sugar, such as cane or grape sugar, both of which are very readily fermentable and produce alcohol and acetic acid.

Fifth.—Much less can the sugar be substituted by starch in any of its forms, nor can any form of starch be safely used in an infant's food, as is most commonly done in most so-called infants'

foods. Nature has prepared *animal* food for the infant; no *vegetable* food can be a substitute.

As regards starch, the infant's saliva contains no ptyalin, which is important for its digestion, and in many cases at least the various starch preparations will pass through the infant's digestive canal in a wholly undigested condition, and the infant, eating heartily, may be hungry all the time and finally starve to death.

We are frequently asked by parents if it is not better to feed infants on other food besides breast milk. The answer should be infallibly no, unless the mother gives an insufficient supply. It is shown by Dr. Whitehead's tables that the children fed on breast milk exclusively resulted in perfect development in 67 per cent., medium development in 23 per cent., and bad development in 14 per cent.; whereas in children fed partly on breast milk and partly on other food there was good development in only 52 per cent., medium in 19, and bad in 39 per cent.; and lastly, as opposed to these results, where hand feeding was used entirely, there was good development in 10 per cent., medium in 26, and bad development in 64 per cent.

If an infant is so unfortunate as to be deprived of its natural food, either on account of the heartlessness of its mother or some accidental cause, it should be committed to the care of a competent, careful nurse. In selecting a nurse it is essential that one of good moral character should be chosen, and, if a wet-nurse, that she is perfectly healthy. Even if one of this character is selected she and the child should be under the supervision of the medical attendant at least once a week for several months, in order to know that the child is well supplied, that it digests its food, and that it is well taken care of.

I believe more infants die from neglect, exposure and want of proper food than from actual disease, aside from heredity. Then, if these matters could be properly supervised, there would be a great saving of infantile life. Many times, if the nurse is of a vicious and reckless disposition and the child becomes fretful from indigestion, hunger or pain, it is dosed with some opiate preparation, or perhaps alcoholic beverage, in order to quiet it and thereby secure time for her own benefit. Habits of this kind practiced on infants are very injurious to health, tending very greatly to impair the digestive functions and vitiate the secretions, to say nothing of ultimate injurious effects that may result.

I have always thought that a mother in good or ordinary health, who, for the sake of enjoying fashionable life or for any other selfish motive, would commit her child to the *tender mercies* of a wet-nurse, or, in fact, any other, is destitute of that natural instinct which pertains even to all inferior animals, and that she, in so doing, not only commits a sin against true motherhood, but

is guilty of possible, unintentional infanticide. Children under a year old, as a rule, when fed on breast milk, need but little medication, unless affected by contagious diseases peculiar to them. To be sure, in cities, during the hot season, we may have some bowel affections which are, apparently, unavoidable. It would be well, in extremely hot weather, to take delicate, and especially bottle-fed, children to the country, where a change of air would do more good than medicine. But on account of want of means a large majority of city children are deprived of the advantage of such a change. It is under circumstances of this kind, particularly in unsanitary localities, that hot weather diseases run up such long mortality lists. This character of children's ailments make up a large ratio of the death-rate in cities during the hot months. I have thought that, through charitable organizations, aided by municipal authority, homes for indigent children might be constructed, where they could be cared for during the summer months and thereby save the lives of thousands who otherwise die from neglect, the want of proper nourishment and from unsanitary surroundings. Much good could be accomplished during extreme hot weather in such buildings by the use of large fans in the various rooms, kept in motion. The difference between hot air in motion and in a state of rest becomes very palpable when we go from a close room into the open air, where there is a breeze. Although the temperature is the same, warm air in motion produces a cooling and an invigorating effect. How grateful it is even to be fanned in the face when one is almost overcome with heat. Large fans could be easily and cheaply constructed and worked at an inconsiderable expense. Netting, something in the form of hammocks, could also be arranged in the rooms to serve in the place of beds for the children, which would allow the animal heat to escape much more readily than from ordinary beds. The netting should be so arranged as to be as nearly horizontal as possible. This would be a very eligible and beneficial arrangement, more particularly in cases of disease accompanied with very high temperature.

Infants, as before remarked, under ordinary circumstances need but little medicine, and that of a mild character. It has been a habit with me for years to use the most simple means in children under a year old. Colic and disordered bowels due to indigestion are the main troubles we are called upon to treat during the first months of infant life. If the child is fretful and restless, with tympany of the stomach, a little ginger or mint tea, sweetened, will in a majority of cases afford relief. Should there be much pain, add a few drops of paregoric. When this is due to indigestion, a little lactopeptine and bismuth sub. nit. might be given with advantage after each nursing.

In cases of diarrhœa accompanied with acidity of the discharges, which is generally evidenced by the smell as well as a foamy appearance, the first thing to do is to correct the acidity. For this purpose a little sublimated or prepared chalk is about as good as anything. This alone will frequently correct the condition of the bowels; but should an astringent be needed, a little syrup made of the fluid extract of cranesbill is as effective and simple as anything we can use; but do not attempt to arrest diarrhœa due to acidity and fermentation by the use of astringents alone. Many times, after the acidity has been corrected, the diarrhœa can be arrested by minute doses of castor oil, say a drop or two given every fifteen minutes until it passes the alimentary canal. The same thing may be accomplished by very minute doses of calomel, say $\frac{1}{10}$ of a grain every half hour until its effects are observed in the discharges.

In an attack of cholera infantum the child should, if in the city, be removed to the country or some place where it can have pure air and healthy surroundings. More, as a rule, can be done by sanitary means than by medicine. If the diarrhœa is accompanied by acid vomiting, administer fresh milk and lime water in small doses frequently repeated, and as soon as the vomiting has ceased exhibit minute portions of calomel or hyd. cum creta frequently repeated until the character of the discharges is changed and become more consistent and less frequent. I have also had good luck in the use of subnitrate of bismuth and Dover's powder in the treatment of cholera infantum. Food should be withheld from the infant during the existence of the acute symptoms. Should the case be protracted after the acute stage has subsided, it would be well to use cretaceous preparations with astringents, such as acetate of lead, cranesbill, kino, etc.

In chronic constipation of young babies harsh purgatives must be avoided, as well as hydrogogues. I have had good results from syrup of figs, cascara sagrada, rhubarb, etc.; but if the child is debilitated combine some muscular tonic, as tinct. nux vom., columbo, etc.

In the various contagious diseases of children isolation is an important element in their management.

In writing this paper it was not intended to claim any superiority over my confrères in the management of infantile life, or with the expectation of presenting anything new in the way of treatment, but more particularly to impress them with the necessity of a closer supervision over young children, more especially during the first months. If, by our attention and advice to parents, we can tide a child over the first year, its prospects to live ten years are increased 50 per cent. It therefore behooves the medical man, as well as parents and nurses, to exercise careful

supervision over their health during that period. If each one of us could, by increased watchfulness, save even one additional life annually over what we have accomplished in the past, it would add greatly to the population of our country.

DR. SEARS, of Texas, said that the life of a child depends very much upon the care it receives during the first months of its existence. There was great ignorance among the people generally as to the quantity of food a child should have, its nature, and the time and manner of feeding. Infants were, as a rule, too frequently nursed.

DR. WHITNEY, of Rhode Island, thought the author had overstated the prevalence of syphilis in children—for New England, at least. He would especially call attention to straining as a cause of infantile hernia. He had never seen a case of true congenital hernia. The condition at birth is simply *favorable* to the production of hernia and for its production.

DR. WILLIAM PERRY WATSON, of New Jersey, took exception to the advice given by the author of the paper in regard to wearing a cap. He directs mothers to keep the heads and necks of their infants bare, and by this means inures the children to temperature changes. As a result he has very few cases of nasal and pharyngeal catarrh among his practice.

DR. LATIMER, of Maryland, said that for artificial feeding there was no testimony defending anything but cow's milk. The doctor called attention to the differences between cow's and human milk, and said that Dr. Meig's method of preparation was to be highly commended. Nothing had been said in the paper about sterilized milk. The mother's milk was taken by the infant directly from the breast and was practically sterile, no opportunity being given in its passage from the mammary gland to the child's stomach for infection with the spores of decomposition microbes. During the hot months the infection of milk with decomposition microbes was a most important factor in the production of infantile diarrhoea, and the sterilization of the food was a necessary prophylactic measure.

THE PURIFICATION OF DRINKING WATER FOR CITIES.

Read in the Section of State Medicine, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY CHARLES V. CHAPIN, M.D.,
OF PROVIDENCE, R. I.

The importance of the purification of public water supplies was impressed upon the writer with special emphasis by the brief epidemic of typhoid fever which occurred in Providence last fall. At that time there occurred in the space of two weeks about 250 cases and forty-seven deaths. The

cause of the outbreak was the contamination of the river which furnishes our water supply, by the stools of typhoid fever patients. That similar occurrences are by no means rare is well known, and probably instances of the kind have come under the personal observation of very many of the gentlemen here present.

The impurities which are liable to be found in the public water supplies of cities are varied. There may be coloring matter from swamps and bogs or other sources which renders the water disagreeable to the sight. The water may be muddy from the presence of clay or earth. It may contain infusoria or algæ which, of themselves or by their death and decomposition, may render the water exceedingly unpleasant both to smell and taste. The water may also contain larger organisms, such as the eggs of worms, parasitic or otherwise, molluscs or fish, particularly eels. Lastly, the water may contain the active virus of disease. While the other impurities in water which have been mentioned may often be sufficient to demand active measures for their removal, it is the actual pathogenic properties of water which are of peculiar interest to medical men. The disease which far more often than any other has been traced to water is typhoid fever. Medical literature is full of instances where epidemics of greater or less severity have been unquestionably traced to a public water supply. Cholera is another disease which has often been distributed by the same agency. Besides these two in which the facts are beyond dispute there is some evidence to show that dysentery, diarrhoeal diseases and malaria may occasionally gain access to the human system through the medium of drinking-water. Now, it has been determined that typhoid fever, cholera and malaria are caused by minute living organisms, and it is most likely that the other diseases mentioned are caused by similar organisms. Hence if we desire to deprive water of its pathogenic properties, and that is the problem which I now wish to consider, we must determine how these organisms can be removed or kept out of our public water supplies. It is true that these organisms doubtless act on the body by means of the soluble chemical products of their vital activity. But such substances can never exist in any potable water in quantity sufficient to do harm, so that if we can remove the organisms themselves we can rest assured that the problem will have been solved.

There are three points at which contamination may be dealt with:

The first is at the source, be it river, lake, spring or well. Every gentleman here will agree with me that no municipality should spare any expense or neglect any legal expedient whereby dangerous contamination of the source of its water supply may be avoided. In many instances, by suitable means of control the water may

thus be kept substantially pure. But in other cases, when the source is in a thickly settled region, this is practically impossible, and fatal contamination is at any time liable to occur. This is well illustrated in the Providence epidemic referred to. Our source of supply is a river flowing through manufacturing villages. At the point where the infection took place the owners of the mill tenements had provided water-tight vaults at a suitable distance from the river, and frequent inspections were made by the Board of Public Works to see that they were kept in repair. But when typhoid fever occurred in these houses the tenants, instead of using the vaults, threw the stools on to the bank of the stream, whence they were washed into the water by the heavy rains.

A second point at which the water supply may be purified is at the point of consumption. To accomplish the removal of the germs of disease as well as of other suspended particles, domestic filters have been used. Sometimes they remove the dirt, sometimes they do not. In any event they do not remove the living bacteria. The experiments of Dr. Swarts, of Providence, show that with one exception the domestic filters offered to the public in this country are worse than useless because, instead of removing microbes from the water, they rather serve as incubators to increase their number. The only filter which he found could be relied on to furnish germ-proof water was the Pasteur, but its cost puts it beyond the reach of all but the wealthy. Boiling water of course destroys all organisms, but it will never be resorted to by the majority of consumers.

Lastly, we must consider the treatment of the whole supply centrally by the municipality. A large amount of experimental work has been done in relation to the removal of microorganisms by filtration through sand or other media, one of the pioneers in this direction being Prof. Pumptelly of this city. Such work has also been done by Hesse and Piecke in Germany and by Frankland in England. But the most recent and elaborate, and particularly interesting from a bacteriological point of view, is the work in filtration which is now being done by the State Board of Health of Massachusetts. These latter experiments are performed chiefly with sewage, but the results attained throw much light on the filtration of potable waters.

The conclusions which have been arrived at are that for continuous filtration on a large scale fine, sharp sand is the best material. The finer the sand the better is the removal of organisms and other suspended matter accomplished, but the slower is the filtration. A rate of from 1 to 2 gal. per sq. ft. per hour has been found to be the most available for practical work. The thickness of the sand makes some difference, but not as much as might be expected, for the upper layers exert by far the greatest influence in removing the organisms.

Strange as it may seem, fresh sand is not as effectual as that which has been in use some time, and sterilized sand has the least value of any. This is explained on the supposition that the grains of sand when in use soon become encrusted with organic matter which serves to entangle bacteria and other solid particles. The heating during sterilization destroys this. It is certainly possible by means of sand filtration to remove all bacteria from water. In one of the filters tested by the Massachusetts State Board of Health the organisms in the applied sewage were reduced by filtration from over a million to less than a score, and sometimes none at all were found. In fact, it was demonstrated that the few organisms discovered in the effluent were only such as inhabited the effluent pipe. When enormous numbers of known forms were poured on to the top of the filter none at all could be discovered in the effluent by repeated tests. The depth of sand in this filter is 5 feet and the rate of filtration is very slow, 1 gal. per sq. ft. per twenty-four hours. While this filter purifies the sewage so that it can be and is used for drinking purposes, it is far too slow for actual practice.

Passing from this experimental work we will now briefly consider some of the filters which are in use for supplying drinking-water to towns.

Of filters on a large scale for potable water those at Berlin were the first whose workings were investigated from a bacteriological standpoint. Ever since 1884 regular weekly chemical and biological analyses have been made of the water both immediately before and after filtration and as delivered at the house taps. These experiments, conducted at the Imperial Bureau of Health, furnish the most complete and valuable data concerning the action of this class of filters. Berlin draws its water from two sources, the rivers Spree and Havel. The former is much polluted and contains a large number of microbes, sometimes as many as 100,000 per cc. The Havel supply has a smaller number. The water from both sources is passed through sand filters. The total area of these filters is about 67,000 gm., or nearly twenty acres. They consist of masonry basins containing successive layers of stone, gravel and sand, the essential portion being the upper layer, which is of fine sharp sand and is about 22 inches in thickness. The manner of using the filter is of particular interest, for it is upon this that its value has been found to depend. It is first slowly filled from below with filtered water so as to drive out the air. Unfiltered water is then admitted from above until it is 1 m. in depth above the surface of the sand. It is then allowed to stand until the suspended matter is precipitated upon the surface of the sand in the form of a delicate film. This is an essential feature, for it is this superficial layer of sediment which gives the apparatus its value as a filter. The effluent valves are now

slowly opened and filtration begins. The rate of filtration is at the maximum about 3 cm. per twenty-four hours through each gm. of surface, or a little less than 1 gal. per hour per sq. ft. The amount, however, rapidly becomes less, and it becomes necessary to clean the filters every four to ten days according to the amount of impurities in the water. The cleansing is done by drawing off the water and removing by means of flat shovels a very thin layer from the upper surface of the filter, for it has been found that the impurities do not penetrate more than a few millimetres. The chemical analysis shows that by this filtration all of the free ammonia, very small in amount, and a large percentage of the oxidizable material (oxidizable by potassic permanganate), and a considerable amount of the volatile residue is removed.

As regards the removal of bacteria, the weekly examinations of the unfiltered Spree water for the year ending June, 1886, gave the average number of organisms per cc. as 11,278, while in the water immediately after leaving the filter bed there were but 179. The unfiltered Havel water contained 2,628 and the filtered 97. In the former case about 98.5 per cent. and in the latter about 96 per cent. of the microbes were removed. The larger organisms, the algæ and infusoria, are completely removed. It is said, however, that the spores of these algæ do to some extent pass through the filter, so that if the water is stored in reservoirs after filtration algæ sometimes develop there in great quantity. That not only good construction but great care in the management of this class of filters is necessary is illustrated by the fact that Currier found that an American filter constructed on the Berlin plan allowed more than half the organisms to pass through simply because it was not properly cared for.

For many years the various water companies supplying the city of London have employed sand filtration to improve the quality of the water furnished by them. Their filter beds are constructed on substantially the same principle as the Berlin beds, and consist of a layer of fine sand supported on coarser sand and gravel. The thickness of this sand varies from $2\frac{1}{2}$ to $4\frac{1}{2}$ feet. The rate of filtration is from 1.5 to 2 gal. per hour per sq. ft., which is considerably more rapid than in the Berlin filters, though the thickness of the sand is greater. These filters are cleaned at varying intervals depending on the amount of sediment in the water, the usual time being once in two or three weeks. The action of these filters in removing microbes from the water was investigated by Percy F. Frankland, who found that the average number of organisms removed from the water was 97.7 per cent. for the Thames companies and 95.7 per cent. for the Lea companies. In some instances, however, as many as 99.4 per cent. were removed. The number of organisms in the unfiltered Thames water varied from 4,800 to 45,000,

and in the Lea water from 2,900 to 39,000. In one instance the filter of the New River Co. reduced the organisms from 20,600 to 74. It is estimated by practical hydraulic engineers that in this country the cost of filter beds of this character would be \$25,000 per million gal. of supply, and that the running expenses and interest on plant would bring up the cost of filtering to \$10 or \$11 per million gallons of water filtered.

Of late years a number of patented filters have been put on the market by American makers and are now in use in many manufactories and in conjunction with several town supplies. In this form of apparatus the water is filtered under a considerable pressure, 40 lbs. or more, and the rate is very rapid and the filters themselves occupy a very much smaller amount of space than do the European gravity filters.

The Hyatt filter consists substantially of a circular wrought iron tank containing as a filtering material about $4\frac{1}{2}$ ft. of moderately fine sharp sand, with about 18 in. of coke (locomotive cinders) on top. This latter is for the purpose of catching the suspended organic matter and preventing its choking the sand. The water passes through the filter under pressure. The resistance of the filter is about 3 lbs.; that is, it decreases the pressure of the water passing through it to that extent. At proper intervals, usually once every twenty-four hours, the filter is cleansed by sending a reversed flow of filtered water up through it, violently agitating it and washing out all the precipitated material that has been removed from the water. The washing takes say ten minutes, and the filter is then ready for use. There is said to be practically no loss of filtering material and it never needs renewal. The rate of filtration is about 125 gal. per sq. ft. per hour. An essential part of the claim of the owners of this filter and of the others which resemble it, is the employment of continuous coagulation with the process of filtration. This coagulation is accomplished by adding to the water before it enters the filter, by means of a suitable contrivance, a small proportion of alum or sulphate of alumina. The amount is easily regulated and the persons in charge of the filters allow a sufficient amount to enter to ensure an effluent which is satisfactory on gross examination. The actual amount used in the filters of this company is said to vary from $\frac{1}{16}$ to 1 gr. per gal., the average being $\frac{6}{16}$ gr. An important question is what becomes of this alum? Prof. Chandler states that he took samples of the water of the Raritan River before and after filtration by the Hyatt filter, which is in use at the Somerville waterworks. He found alum present in the unfiltered water in about the amount in which the operators of the filter claimed they were adding it— $\frac{1}{3}$ gr. per gal. The water after filtration he found "did not contain a trace of alum." Other analysts have obtained the same results. It is

claimed by the makers of these filters that the alum all unites with the organic matter in solution in the water and, forming a part of the coagulum, is removed with it. Whether this is true in all instances I am not prepared to say, enough experiments under varying circumstances have not as yet been made to determine it with certainty. We can be sure, however, on general principles, that a considerable amount of alum must be decomposed and removed in this way if there is much organic matter in the water, and the alum would not be added unless this organic matter were present. In the localities where this process is in use there is no complaint of any taste of alum in the water, nor any complaint that I have heard of from medical men that the added alum causes any digestive troubles. And we should hardly expect that it would, for even 1 gr. in a gallon is an extremely small amount, and much less than this is the usual quantity employed and a large part of this must be removed in the precipitate. On studying alum baking powders Prof. Mallet found that 20 gr. of alumina hydrate were required to affect digestion unpleasantly, and it is hardly to be supposed that the amount derived from even $\frac{1}{3}$ gr. taken in twenty-four hours in divided doses would produce any bad results. And $\frac{1}{3}$ gr. is as much as would ever be taken by one person even if it all passed through the filter. It seems highly improbable, then, that the addition of alum to potable water to produce coagulation preparatory to filtration can produce any injurious consequences on the consumers.

The National filter is another filter of this class which has come into quite general use, and which differs from the Hyatt in what are apparently minor points. The makers of this filter recommend that when it is used to furnish a town supply a pump be used to add the alum solution, thus ensuring a more certain regulation of the amount than can be obtained by the regulation which depends on a supposed constant rate of solution.

The waterworks in this city have recently put in a filter which will be described to you by Dr. Rankin, and which seems to differ from the Hyatt only that it is open to the air and filters under a head of a few feet only, and is so very much larger that the rate of filtration is hardly one-fifth as great as in the Hyatt and National filters. These points of difference seem to be in favor of the Newport filter, and why it does not give better results I cannot say. The owners, however, do not claim that it is yet in proper working order, and have certain changes to make which they expect will improve it.

There are several other makers of this class of filters, but the Hyatt and National are the best known and seem to be good types of the principle of coagulation and continuous filtration under pressure.

For the purpose of examining the Hyatt filter

in person I recently visited Long Branch, where a 2,000,000 gal. plant was established a year ago. I found the plant in operation as described, and it had given great satisfaction to the users of the water ever since it had been put in. At the time of my visit the unfiltered water was of a dark yellowish brown color and had considerable organic matter in suspension. It was surface water from swamps and shallow ponds. The effluent was perfectly clear and colorless. The pumps were lifting at the rate of about 1,800,000 gal. per twenty-four hours, and the engineer was adding about 180 lbs. of alum during the same time. This would be a little less than $\frac{1}{16}$ gr. per gal. The filters had been cleaned in the morning and I made a biological examination of the water in the afternoon. Three gelatin culture tests were made on the spot at intervals of half an hour. After a growth of thirty-six hours, at which time the liquefying cultures began to run together, the results were as follows:

	1st Test.	2nd Test.	3rd Test.
Unfiltered	258	298	248
Filtered.	5	2	3

The only other biological test that I know of, of this filter, was a single one of Prof. Formad at Allegheny City, in which about two-thirds of the organisms were removed.

None of the National filters for town use have been accessible to me, but the makers of the filter suggested that a satisfactory test could be made at the Valley worsted mills, Providence, or at the bleachery at Canton, Mass. In the former place I found the alum was not used, and the filter was made to work under much greater pressure than was intended. It furnished water clear enough for manufacturing purposes, but scarcely half the microorganisms were removed. At Canton the alum was in use, and too much so, for it was stated by the engineer that he thought that $1\frac{1}{2}$ grains per gallon was added to the water. What the amount really was I do not know, but it could be readily tasted in the effluent. Five tests gave an average of 86 per cent. of the organisms removed. Dr. Currier tested one of these filters at Brooklyn, and found that it removed a much larger per cent., and in one instance the effluent was entirely sterile. He also failed to detect any alum in the water.

The Newport filter I found had no appreciable effect in removing the bacteria from the water, and you have probably noticed that it leaves much of the other suspended matter. But as I am informed by Dr. Rankin, the amount of alum added is so small, and it is so largely removed by the filter that it can exert no injurious effect upon the water.

There seems to be then little doubt that both the sand filters in use in Europe and certain of the coagulating filters made in this country can

be relied upon to remove from 90 to 100 per cent. of the organisms contained in the water.

They cannot be relied upon to render infected water absolutely safe. But we know that the smaller the number of pathogenic organisms which a person receives the less liable is he to be affected by them. If nine-tenths of the organisms can be removed, I believe it is not far from the truth to assume that nine-tenths of the danger will be removed.

The cost of the European system is, as has been stated, \$10 per 1,000,000 gallons. The cost of the coagulating system is not more than half that. It is also, when properly constructed, much easier to manage. Its only disadvantage is in the addition of a foreign substance as a coagulant, and I am inclined to believe that further investigation will show that no danger is to be apprehended on that score.

Aeration has been spoken of and used as a means of purifying water, but it can only accomplish this to a very limited degree. There is no reason to believe that aeration has any influence on the growth of bacteria, and recent investigations have shown that its power of oxidation is very slight indeed. It is true that aeration is sometimes very useful in removing the smell or taste of water, but it accomplishes this by volatilizing or driving out the offensive substances, rather than actually oxidizing them *in situ*. At least this is the view now generally adopted by the best chemists.

There is another means of improving the water supply, at least, so far as bacteria are concerned, and that is by allowing it to stand in storage reservoirs. The experiments of Wollhügel, Bolton, Frankland, and others, have demonstrated that pathogenic organisms, such as cholera, typhoid and anthrax bacilli and various pus-forming organisms soon die in ordinary river or well water, the typhoid bacillus living only about two weeks. Certain harmless aquatic forms do, however, live and propagate, but observations show that most of the bacteria found in our town supplies rapidly perish. This was found to be true at Berlin, and Prof. Sedgwick determined it for Boston. In Providence we have two reservoirs, both in constant use. One holding ten days' supply, the other three months. Bi-monthly analysis for a year showed as the average number of organisms in the river 354, in the ten days' reservoir 223, in the three months' reservoir 42. Storage reservoirs may, however, develop algæ which, besides rendering the water unpleasant to the taste and smell by their death, furnish pabulum for the bacteria. But the growth of the algæ can be prevented by covering the reservoirs, and it is not to be apprehended in every case.

In order to purify water then,

1. The source must be made as pure as possible.

2. Storage reservoirs should be built.
3. The water should be filtered by the municipality.
4. The consumer must boil the water if any danger is suspected to exist; but it is not likely to if the first three conditions are complied with.

DR. SMART took exception to the suggested idea that if nine-tenths of the bacteria are removed by filtration the danger is proportionately lessened. He said it was all very proper to filter water if the water was made purer by the filtration, and it was a good thing to have experimenters determine for us in such cases the extent of the purification that was effected; but he suggested that certain experiments had been performed to which no reference had been made by the author of the paper just read. Biological experiments, in which the organism had been cultivated, not on gelatine plates, but in the human system. The paper had a special reference to typhoid fever, and we all know of the propagation of typhoid by waters, well waters which had been filtered through the soil until they had lost all trace of their organic matter, and became apparently so pure that the chemical analysts were obliged to confess their inability in certain cases to say whether a water was wholesome, although it seemed to be pure. On account of this consideration he objected to placing any reliance on filtration where the contention was against typhoid fever. Water which has not been contaminated should be obtained from a community rather than permit its lives to be wasted by a fever germ which cannot be removed by filtration. Non-contaminated water should be procured, no matter what the financial consideration.

EVISCERATION.

Read in the Section of Ophthalmology, at the Fortieth Annual Meeting of the American Medical Association, June, 1887.

BY A. E. PRINCE, M.D.,
OF JACKSONVILLE, ILL.

It will be five years in September since Prof. Alf. Graefe, of Halle, delivered his address before the Society of Naturalists and Physicians at Magdeburg in which he described the operation of exenteration or evisceration, and asserted the advantages that it possessed (except in malignant diseases) over enucleation, viz.: that the danger of meningitis was avoided, and that a superior stump was thereby obtained. Besides the denial of these claims, by some it has been objected that the greater degree of pain, and increased amount of inflammatory reaction, together with the prolonged period of healing, were decided disadvantages to be taken into account.

It is not my purpose in this paper to review the arguments of the author regarding the advantages of the method; but first, to offer a consideration

relating to the chief objection, that of the consequent pain; and second, to mention an observation which may prove of value in securing a further improvement in the character of the stump.

PAIN.

All the published accounts of the operation which have come to my notice agree in the acknowledgment, that the severity of the pain and the duration of the healing is materially greater after evisceration than is the case following enucleation. My observation in the first five cases was a corroboration of these statements. The swelling was intense and the pain for several days was very great. Local application failed to afford relief, and morphia was required. At this period in my experience, stimulated by this discouraging feature, an effort was made to determine the cause of the pain. The anatomical fact that the long ciliary nerves lie in exposed grooves along the concave surface of the sclera, leading forward to the ciliary region, led at once to the hypothesis that the cause of the pain was the tension, pressure and inflammatory irritation to which these nerves were subjected.

To test the truth of this hypothesis the entire concave surface of the sclera was cauterized with pure carbolic acid immediately following evisceration in a case of extremely painful panophthalmitis consequent upon an incision, the suffering attending which had been intense for several days.

The result surpassed all expectations. The pain ceased with the operation. The degree of swelling was small and the patient was discharged in five days. Since this operation the number of eviscerations has been about twenty-five. The results have not been uniformly so brilliant. Sometimes the conjunctiva has become œdematous and been forced out through the palpebral aperture, but in no case, in which the cauterization has been efficient, has there been the type of pain which was remarked previous to the cauterizing treatment.

It is believed that the use of the acid in this connection is indicated

1. On account of its quality as an antiseptic.
2. Because it is an anæsthetic.
3. Because it is believed to close the apertures in the sclera, and thus prevent the escape into the orbit or sheath of the nerve, of any microorganisms which should escape the action of the acid.
4. Because the sensory nerves thus treated cannot respond in sensations of pain to the subsequent irritation and tension to which they are liable to be subjected.

STUMP.

The second question raised by critics is that of the nature of the stump.

That the question is one which deserves attention will not be denied. The inadequacy of the stump following enucleation needs only to be

mentioned. Dr. Mules, of Manchester, England, struck a responsive sentiment when he published his observation on the use of the glass vitreous, in 1884.

The general feeling was that it would be a great step forward in cosmetic surgery if his method could stand the test of experience.

From the little that has since been said of it I am led to infer that the practice, which was at first so extensively resorted to in Manchester, has not met with extended favor. My experience in the use of the artificial vitreous in six cases was at first very encouraging, but later equally discouraging.

While the balls were at the commencement retained kindly and the patient seemed overjoyed at the excellence of the stump, this joy was converted later into grief in five cases of the six by the absorption of the line of union and the escape of the glass ball. Though my experience in attempting to secure the permanent retention of artificial vitreous is to be regarded as a failure, yet there was an element of instruction in it which I offer for your consideration. It was noticed in some of these cases that even though the glass ball was retained but a few days, it left upon its escape a distended sclerotic, infiltrated with formative material which prevented the usual collapse, and enclosed a cavity which gradually filled with granulations and finally resulted in a stump which was fuller and more mobile than that following enucleation. Following the lead of this inquiry I was led from theoretical considerations, after cauterizing with carbolic acid, *to pack the cavity of the eviscerated globe with pulverized iodoform.*

The method which has been employed is to dry out the globe and, after pouring from a paper funnel into the cavity of the globe as much of the powder as it will contain, to tamp it with cotton on a cotton holder, making room for more of the iodoform, which also is to be lightly packed into the cavity. If packed too tightly the escape of the serum is impeded, and in that event, either forced to infiltrate into the orbit or extrude the plug of iodoform. Pursuing this process it has been observed in more than a dozen cases that the sclera remains partly distended by the iodoform, which may remain in position for several days or even weeks, in some cases.

In one case of recent injury in which I eviscerated, cauterized and packed with iodoform, on the following day no pain had been experienced and exceptionally no swelling had resulted. The patient was to notify me if he had any trouble. On the fifth day my assistant called and found that he had removed the bandage and taken a trip into the country. He subsequently objected to having the bandage reapplied, and was digging wells in another week. In his case a small plug of iodoform remained for three weeks and was finally crowded out by the encroaching granulations.

An excellent stump possessing good excursion was the result. After three months, considerable shrinkage has occurred, but there is still a fair degree of prominence and good motion. In no case in which iodoform has been packed into the sclerotic cavity has there been the least suppuration, which, to my mind, establishes the position of iodoform as an antiseptic, when it can be retained in contact with moist organized tissue, in the presence of which iodine is probably liberated.

The conclusion drawn from my experience is that, though the subsequent shrinkage is more than we would wish, yet, the resulting stump is sufficiently better than that following enucleation to lead me to prefer it in all cases, except in those of suspected malignancy, and those in which the fellow eye is deeply situated in the orbit.

Dr. Prince also exhibited a book for registering cases in which the ruling is so arranged that, by glancing at the page, it is possible to see immediately the number of cases of a given disease recorded.

DR. JACKSON stated that Dr. Williams, of Boston, was the first to record a case of evisceration. Dr. Williams was thereupon asked to speak on the subject.

DR. WILLIAMS regarded the pain ensuing after evisceration of the globe as differing from the ciliary neuralgia previously felt, in having such a character as might be due to oedema and congestion of the conjunctiva and the orbital cellular tissue. He had been in the habit of evacuating completely the contents of the scleral cavity in cases of phlegmonous inflammation of the globe, and then—as also in excision of anterior portions of the globe in cases of anterior staphyloma or hydrophthalmia—of bringing the edges of sclera together with sutures. A very good stump, sometimes with little diminution in size of the globe, is thus obtained, which partly fills the orbital cavity and affords good support to an artificial eye.

WHAT DRESSING SHALL LIE NEXT THE WOUND?

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY ROBERT T. MORRIS, M.D.,
OF NEW YORK.

The combination of vaseline or oil spread upon any textile fabric represents the worst type of surgical dressing, because the unguent mingles with exuded lymph and retards organization of the latter; because the textile fabric entangles new epithelium cells and connective tissue cells; and because the moist condition of such dressing favors the development of troublesome micrococci. (Lint and cotton are even worse than textile fabrics.)

The cerates spread upon textile fabrics are one point better, because new epithelium cells are not entangled in the mass, but such dressings must not be employed nowadays.

Balsams spread upon textile fabrics or upon lint or oakum have a very limited field of usefulness. The dressing composed of the above mentioned elements is fairly antiseptic, but it does not avoid the danger of entanglement of new epithelium and connective tissue cells in a wound which is undergoing repair.

There are only two types of the perfect dressing. An iodoform covering for small exposed wounds represents one of these. Iodoform forms a thin, firm coagulum with lymph, and this is not readily destroyed by microorganisms. Moreover, even when a limited number of microbes are at work, the iodoform neutralizes the poisonous ptomaines which they produce, and thus removes an element of disturbance.

The other perfect dressing is the one which is required for the great majority of wounds, and it is composed of the following elements and for the following reasons. Let me say by way of preface that the surgeon is supposed to be familiar with the scientific antiseptic methods of to-day.

Immediately next the wound we must have a strip of the Lister protective oiled silk, which is furnished by all manufacturers of antiseptic supplies nowadays. New epithelium and connective tissue cells shoot along under this material without interruption, and it is the only material with which I am familiar that will prove wholly satisfactory. Gutta-percha tissue is absolutely waterproof and the wound beneath it looks sodden. Spun glass does not avoid the danger of entanglement of new repair cells; but the Lister's protective oiled silk allows of a sufficient transudation of moisture from the wound, so that the tissues beneath this dressing are not kept abnormally moist, and it presents a regular smooth surface to the dressings applied. Without the Lister's protective, it is almost impossible to obtain repair in a wound by the new method of clot replacement—but with the protective, after the employment of actual antiseptic methods of work, it is an easy matter to obtain repair in quite large open wounds in a very short time by the method of clot replacement.

Again, in skin grafting, the Lister's protective will make even pressure upon all parts of the wound, and when the dressing is changed we avoid tearing off the thin hyaline borders of new epithelium that have started in on their mission of repair. It makes a vast difference whether we apply a dressing in which this pretty new epithelium becomes entangled, or one under which the epithelium is allowed to attend strictly to its own affairs.

If we wish to apply the permanent dressing to a large suppurating surface and to stop suppuration it is difficult to accomplish our ends without

the alliance of the Lister's protective antiseptically prepared.

We must first destroy all of the pus and all of the microorganisms by pouring peroxide of hydrogen upon the suppurating surface. As soon as the peroxide stops foaming we know that the granulating surface is chemically pure. The strip of Lister protective, just large enough to cover the granulating surface, is then applied, and over it a bulky dressing of absorbent gauze or cotton. This dressing may remain in place untouched for several weeks if necessary, and it is possible to apply the dressing in such a way that not another drop of pus will be formed beneath it.

FORCED RESPIRATION.

Delivered in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY GEO. E. FELL, M.D., F.R.M.S.,
OF BUFFALO, N. Y.

Forced respiration is an advance upon artificial respiration. It will save human life where the latter will fail. This is now a clearly demonstrated fact, the cases treated by the author proving this conclusively. Four lives have been saved in America by the author and one in Vienna later by Prof. Dr. Boehm, of the Vienna General Hospital. In the first case 20 grs. of morphia were taken. After all known methods of resuscitation had been used, forced respiration was used for two and one-half hours and the life of the patient saved.

The second case took place in Vienna, Austria. In the third case 2 ozs. of tr. opii had been taken, all retained, and after artificial respiration had failed, forced respiration continued from 4 A.M. until 6:30 P.M., or fourteen and one-half hours, succeeded.

Fourth case. Tr. opii $\bar{5}$ j taken, anterior jugular vein and trachea cut with razor, and a large amount of blood lost. Forced respiration produced; patient became conscious in four hours. Forced respiration kept up until 4 A.M., when $\bar{5}$ viii of a salt solution of $\frac{1}{2}$ per cent. was injected into left basilic vein by transfusion method. After twenty-one and one-half hours the patient first breathed freely for himself. In half an hour he requested that forced respiration be renewed for him, this was repeated and the patient made a good recovery.

The fifth case took place in a man 80 years of age who had taken $\bar{5}$ j tr. opii. Forced respiration kept up for some twelve hours failed to produce recovery.

Sixth case. Child 18 days of age had been given by mistake of a physician 1 gr. of morphia, which was retained with all its serious effects five hours before respiration per tracheotomy was instituted. After about four hours' time it failed through heart failure to keep up life.

Seventh case. Morphia in large but unknown quantity taken. Operation undertaken after pulse at wrist was lost, pupils dilated, and auscultation failed to detect heart action; blood on tracheotomy venous. Forced respiration produced return of pulse at both wrists and clear action of heart on auscultation. Blood became arterial. Within about an hour it stopped beating.

Eighth case. Tr. opii $\bar{3}$ ij taken. Patient cyanosed, heart action weak, respirations about 1 per minute, dilatation of asphyxia taking place. Forced respiration for about eleven hours saved the patient. This last case occurred within this week.

The apparatus is simple, practical, can be used by any intelligent physician, and consists of a bellows to supply a steady column of air which passes through an air heating apparatus. The operation may be carried on in the open air. The apparatus connects with an air valve which controls the ingress of air to the lungs and is connected by an elastic tube with a tracheotomy tube which is placed in neck and trachea of patient.

The movements of bellows are utilized to control time of inspiration and expiration. The author believes that the operation should be used in cases where indicated, now that it has been demonstrated to be of value in saving human life.

THE PRINCIPLES THAT SHOULD GUIDE US IN THE RATIONAL TREATMENT OF GONORRHOEA.

Read before the Mississippi Valley Medical Association, September, 1889.

BY BRANSFORD LEWIS, M.D.,
OF ST. LOUIS

If we were to reckon progress in medicine by stages, we could select no more apt a term for designating the present one than that of the Stage of Bacteriology. Bacteriology has assumed such an important rôle in all that relates to medicine or surgery, that our attention is drawn to it in the consideration of almost every subject in medical or surgical science. And yet, dropping from this lofty plane of thought, which tempts us into the field of glittering generalities, and limiting ourselves to the more practical question at hand, let us inquire, what has this all-absorbing and comprehensive study and knowledge of bacteriology done for assistance in the treatment of gonorrhœa? Has the hope of aborting, of quelling, of exterminating the disease by a treatment based on the discovery, study and acquaintance with the life history of that sturdy villain, the gonococcus, been realized? Have the methods of treatment thus brought into vogue accomplished the great wonders expected of them? Have they accomplished anything

more than the palliation, to a considerable extent, of the severity of the disease, of shortening, somewhat, the duration of its several stages, and of doing away with the old and barbarous forms of astringent, caustic and stimulating injections? I believe that all those who have tried this or that new antiseptic, this or that "infallible germicide,"—not simply on two or three isolated cases, in which beautiful results may have been attained, and which, by the way, were in all probability not gonorrhœa; I say, that all those who have tried such new antiseptic plans of treatment in a number of cases are doubtless convinced that none are infallible; that all are subject to various influences, deleterious or favorable, that were met with in treating after the older, prudent methods.

Many beautiful and touching theories have been constructed to explain how the gonococcus would quail with fear when, in his revels, he should detect from afar the fumes of death-dealing iodoform, brought into action by means of this or that preparation; or how he would shrink with horror at the prospect of being literally boiled alive by hot injections; or washed out into the cold, cold world by the relentless flood of a prolonged irrigation; or of being crushed in spirit, body and soul by the continuous presence of a medicated gelatine bougie; or dried up into an Egyptian mummy of a coccus in the arid soil of a mildly astringent, antiseptic, non-irritating, magic healing, absorbent powder! But experience with these agents would seem to indicate that the usual rule of the breeding of contempt by familiarity is not broken in this instance. Nay, more. That the festive gonococcus after a time appears to become sufficiently acclimated to enjoy his surroundings, for a while, at least.

And this, notwithstanding the fact that antiseptics do kill gonococci, and with great certainty and facility—when they are in culture-fluids. But why not, when they are in the urethra, as well? For this reason: The gonococcus in preparing himself for the conflict does not foolishly remain where his foes can get at him with these various medicaments; he makes his landing and starts immediately for the woods, so to speak. He pushes on, by proliferation, between the epithelial cells, breaking through their connecting substance and finally ensconces himself below its deepest layers, along on the basement membrane, and even sometimes within and between the interlacing fibres of this structure. Here he proliferates and disseminates to his heart's content.

This has all been repeatedly and absolutely proved by eminent investigators. Bumm has watched the invasion of the conjunctival tissues by the hordes of gonococci; has seen them penetrate to the connective tissue layer, and has noted the strong obstruction offered by this tissue to their further progress. Not only this, but he has seen that the effect of astringents applied

over the epithelial surface serves only to constringe and harden this covering, which then, indeed, forms a secure protection against the absorption or leaking through of any germicide or antiseptic which, embodied in the injection or whatnot, has been applied to the mucous surface. Moreover, he has seen that the elimination of the cocci contained in this meshwork of cells and fibres is brought about, not by the penetration of the germicides into the tissues, there to attack the organisms in their strongholds, as has been thought by some, but it is accomplished by a process of proliferation of the connective tissue fibres into which gonococci are unable to penetrate, as intimated above. In the stage of improvement, these fibres, incited by the irritation present, increase in number, push forward, driving before them the microbes towards the surface of the membrane, from which they are washed by the outgoing urine, or killed by the germicides. When a sufficiently strong connective tissue bulwark has been constructed, new epithelial cells begin to dot the denuded surface here and there. The cocci have by this time lost much of their vitality and are unable to break them down with the ease shown at the first onslaught. The conditions for resisting their inroads, too, are then more perfect. They lie simply along the surface or among the superficial cells.

So that the final process of cure depends not altogether on the extermination of the few remaining gonococci, but also, and perhaps even more especially, on the closing of the tissues against their further invasion by the development of firm layers of this protecting barrier. And the inflammation then persisting may be interpreted as denoting the chronic irritation remaining after the severe disorganization wrought by the previous disease.

It is for these various reasons then, that in the earlier stages, when the gonococci themselves are doing the damage, the efficacy of antiseptics, germicides, astringents, etc., is limited to the position which they now occupy.

In order to overcome these impediments and give access of the medicines to the ambushed cocci, an enthusiastic Frenchman has recently suggested that the epithelial coat of the mucous membrane be scraped off by a brush-swab, on the plan commonly used in cleaning a pistol barrel; after which the urethra is to be douché with a powerful antiseptic solution. This method is original and ought to prove effective—in producing a stricture, if nothing else. It is certainly more energetic than any I should care to undertake.

I would therefore submit, that efforts at aborting or killing gonorrhœa with strong medicines, antiseptic or otherwise, not only do not attain the desired end, but are ill-advised and liable to be followed by unfortunate sequelæ or complications.

Consequently, treatment should be based on a plan having for its object the idea of carrying the disease through its various stages, as authors used to say, *tuto, cito et jucunde*; allowing the patient to experience as little discomfort, pain and annoyance as possible, mollifying the inflammatory reaction and destroying, devitalizing and discouraging the gonococci as much as our rather restricted powers will admit of; and hastening the healing process with all possible speed.

To accomplish these ends, having used various forms and modes of treatment, I have concluded that the one offering, with the general run of cases, the most advantages with the fewest objections, is that of giving in the first stage of the affection, simply alkaline diluents and sedatives internally, making use of such adjuvants as dipping the penis in hot water, etc., and in the second and third stages, giving injections of lanolin, medicated with an absolutely unirritating antiseptic, to which may be added in the third stage a mildly astringent and stimulating antiseptic.



As a means of introducing the ointment, I have been using, during the last six or seven months, this hard rubber applicator, which I present for your inspection. As you see, it consists of a catheter-like stem, perforated at its end, which is inserted into the urethra to the desired depth; a box to contain the ointment, and a piston which is screwed into the box, driving the ointment before it into the stem and thence through the perforations into the urethra. When properly performed, an injection given with this instrument causes absolutely no pain or discomfort for the patient. But sometimes a sudden movement on his part will jog the stem against some tender spot and evoke an immediate and earnest protest. To obviate this and to leave nothing undone that could in any way assist in avoiding irritation of any kind, I have had some vulcanized, soft rubber stems constructed, which answer the purpose very well. The square shape of the second (modified) box is of advantage in affording a surer hold on it. The stem need not be inserted as deep as its length will permit; the flex-

As to my reasons for preferring lanolin to other vehicles, I would say, that with reference to the other vehicles, water, the most common, is itself, in its purest state, irritating, and unless it contain some local anæsthetic, will cause pain; powders or tablets, though dry and absorbent when first deposited, soon become moist and cake up, losing the properties for which they were chosen. Gelatine bougies give pain at every movement of the body until they are liquefied; mucilages or emulsions present no advantages which are not possessed to a greater degree by lanolin, and—a point of great importance—all of them are lacking in “staying” qualities; with the first passage of urine, out they go, and in order to make their effect continuous, they must be renewed several times a day, entailing frequent repetition of the trouble, pain, etc., experienced each time.

Lanolin presents none of these disadvantages; it is wholly unirritating—is even soothing to inflamed tissues. When introduced pure, even without any pacifying sedatives, it invariably causes a feeling of relief and comfort to the patient who has been constantly reminded of his ailment by the teasing, harrassing sensation incident to all cases of gonorrhœa. As one patient remarked, the ease afforded allowed him to forget all about it for hours at a time, whereas, before he began to receive the treatment, it was never out of his mind while he was awake. I believe that the principal reason for this is, that it keeps the inflamed surfaces apart, preventing their continuous friction and auto-irritation. Actual pain in the urethra is also mollified by it.

The oiliness of lanolin assures its adhesion to the canal walls, even in spite of the flushing of the urethra by the stream of urine. It may be noticed floating on the urine of the second or third passage after the application. It is evident that in this respect, too, it surpasses all of the excipients named. An authority tells us that lanolin possessed antiseptic properties of no mean order.

I shall not take up more time in detailing its many advantages, which are almost self-evident.

As to the medicament employed, any remedy given in solution may be prescribed with equal propriety in lanolin. Of the various drugs which I have used, I sum up my impressions as follows: Bichloride of mercury, even in minute quantities is too painful or irritating, and frequently causes an increase in pus-formation; carbolic acid is also irritating, but not painful; iodoform might be used were it less perniciously active in its odoriferousness. The zinc preparations are applicable to the later stages, in which they give material assistance towards shortening the wind-up. Resorcin would be a most admirable remedy were it not a most aggravatingly unstable drug. If administered after it has degenerated, it will not be long ere the operator has cause to regret his ef-

ibility of the lanolin and elasticity of the urethral walls assure the spreading of the ointment over the inflamed area.

forts in the way of economy. Boric acid directly following the increasing stage of the affection, seems to fulfil every indication; it is an antiseptic, a germicide, and yet has absolutely no irritating effect upon the inflamed membrane. It is capable of killing the gonococci that it reaches, and of preventing attacks from other microbes which give rise to the secondary, or mixed, infection of Bumm. And, by the way, the continuous presence of medicated lanolin forms a vigilant guard against this complication.

Agreeing then with the dictum of all authorities of the present day, that gonorrhœa is a specific disease which cannot be aborted after it is once fairly started, I conclude that

1. Our treatment should not have for its object the futile idea of jugulating the disease in its early but established stages.

2. The endeavor to control its severity, to lighten in every possible way all of its disagreeable features, to shorten its course and to ward off complications, should be our guiding principles.

3. No local agent does its share in fulfilling these indications more perfectly than does lanolin, medicated after the manner suggested.

1006 Olive Street.

MEDICAL PROGRESS.

A CONTRIBUTION TO THE HISTOLOGY OF THE CEREBRUM.—(By PROF. C. L. HERRICK, University of Cincinnati.) The striking results of recent investigations upon the physiology of various parts of the hemispheres, conflicting as they are, have given a fresh impetus to the study of the minute structure of the cortex. The interest manifested upon the subject is so wide-spread that the following notes are offered in advance of the paper in the preparation of which they were made.

In spite of the astonishing advance made during the last ten years in the knowledge of the anatomy of the brain, there remain a large number of questions of primary importance upon which nothing is known, or the testimony is so contradictory as to have value only as a stimulant to further investigation. Indeed, the most important question of all in this connection seems to have fared the worst.

The primary and permanent gain of experimental work has been the demonstration of the topographical distinctness of various motor and sensory areas in the cortex. The latest critical studies of Luciani and Seppilli leave no doubt that, however difficult or impossible it may be to sharply outline such areas, there are distinct parts of the cortex chiefly occupied with special senses and special groups of muscles.

If the occipital lobe be chiefly concerned with the function of sight and its intellectual concomitants, and the region about the crucial sulcus more particularly with the origin of voluntary motions of extremities, what more natural than to expect these areas to afford quite different histological elements to the microscope? Bevan Lewis has demonstrated that such a difference actually exists, and with masterly skill has pointed out and illustrated the characters of the motor areas. His figures of the cortex of the limbic lobe and region of the crucial sulcus are certainly beautiful, and amply reward the patience of the author. The last papers of this writer which reach us do not, however, indicate that the distinction between motor and sensory areas, bears any correspondence to the facts of physiology; that is, although the presence of large ganglionic cells in motor areas and their absence elsewhere is important, it does not afford a clear idea of the direction which the stimuli pursue in being transformed from sensory to motor phases. To say the motor areas possess a five-layered cortex and the sensory a six-layered is an advance, inasmuch as we are able to distinguish microscopically the two sorts of areas and concentrate attention more closely upon the intimate structure; yet we cannot discover why a five-layered mass of cells serves the motor function better than a six-laminated cortical area; neither do we see any clue to the problem as to the way in which these areas affect each other. Moreover, the naming and numbering of cortical layers is necessarily arbitrary, and along the distinct boundaries it is impossible to sharply distinguish motor from sensory cell-chains.

Luys has positively announced a very different basis for distinguishing the sensory and motor cells. Making no topographical distinctions, he simply declares the smaller superficial cells of the cortex sensory, and the deeper ganglion cells (including the "giant cells") motor in function, somehow deriving the fibers passing to the former from the thalamus, and sending the descending processes of the latter to the corpus striatum. This has seemed to impress most critics as somewhat mythical, and really the difficulties in the way of demonstrating such minute connections seem unlikely to yield to methods like those employed by our author.

The present writer, in the midst of a series of investigations, undertaken in connection with Prof. W. G. Tight, of Denison University, upon the anatomy of the brain of rodents and lower mammals generally, has been led to believe that the attentive study of these simpler brains affords a solution of this most important problem of cerebral histology. The work is but begun, yet its results upon this point seem worthy of a preliminary abstract.

The subject chosen was the ground-hog, *Arctomys*

tomys monax, while the brains of rabbits, opossums and raccoons served for comparison. The functions of the cortex were investigated by electrical stimulation and extirpation. In this way the motor centers for the fore and hind legs, the muscles of the face and neck and the sensory areas were accurately diagramed. A method used by us for the first time may be incidentally mentioned as worthy of more careful employment. As the electrodes were removed from the brain a small pasteboard or wooden peg bearing a number was inserted, and the reaction produced at this point was carefully recorded upon a diagram of the surface of the hemisphere with the corresponding number attached. After the removal of the brain these tags served to check the accuracy of the diagram and a careful drawing was made, including the areas experimented on.

The brains were placed in chromacetic solution twenty-four hours and then in alcohol, and continuous series of sections in various directions mounted in balsam. Several hundred such sections were prepared and studied by the method of geometric reconstruction from camera drawings and measurements.

To briefly summarize the facts elicited upon this point, it may first be stated that over the entire recognized motor area and along the limbic lobe, or region along the median fissure, a well-defined type of structure can be observed, while the remainder of the cortex contains an entirely different set of cells. In the motor area the cortex resembles that described by Bevan Lewis in the sheep and pig, though the minor subdivisions are less distinct. The outer neuroglia layer is followed by a zone of small pyramidal cells with a strong axial process derived from the superficial layer and fine anastomosing fibrils from the lower and blunt extremity. Below this is an indistinct layer of fusiform cells, which connect below with the "giant" or ganglion cells, which are not only more than twice as large as the other members of the series, but are nested or clustered and have peculiarities of form readily distinguishing them. The axial process is strong and may be traced upward a considerable distance. The numerous inferior processes of these giant cells connect with multipolar, parametric, or irregular cells lying upon or imbedded in the white fiber zone. Occasional anastomosing of cells of the same level can be detected, but the connection seems generally to be between cells of different orders.

Now directing our attention to the cortex in portions known to lie within the sensory area, we find an entirely different type of cell arrangement. In general, the sensory, or, preferably (not to prejudice their function), centripetal, cells receive the stain less readily and are only visible in good preparations; but distinctions based on receptivity to stain are untrustworthy. The cells of the

upper zone, lying next the neuroglia layer, are nearly of the same size as those of the corresponding zone of motor areas, but are more nearly globular, possess a larger nucleus, and, in particular, *receive their axillary process from below*. Cells of this sort occupy the entire thickness of the cortex to the depth of the giant cells, the only variation observed being an increase of size downward. Corresponding to the giant cells of motor areas are large pyramidal cells, each with a slender downward projection terminating in an axillary process, while the *upper* blunt extremity gives off numbers of fine fibrils. Thus the contrast is complete, the course of the chains of cells being completely reversed, and we seem warranted in assuming that there is a similar variation in the direction of the stimuli traversing these chains.

We hasten to explain that this variety of cell which is termed centripetal is by no means limited to circumscribed areas exclusive of all centrifugal or motor chains. On the contrary, there are numerous centrifugal cells scattered in groups within the area chiefly affected by the centripetal variety, and, *per contra*, the centripetal variety is sparsely scattered among the undoubted centrifugal elements of the motor area. Nevertheless, in those areas ascertained by electrical stimulation and extirpation to be sensory the centripetal variety greatly preponderates, and in the optic centre quite excludes the other, while in the motor centres the other type occupies the prominent rôle. To carefully test this point, sections taken through an isolated motor area surrounded by a zone indifferent to the electrode were sought. Such an opportunity is afforded by the centre to the sphincters of the face, which can easily be located in rodents. This spot lies well back of the centre for the hind leg, and near the median line. The existence of a sensory centre for the *orbicularis palpebrarum* was postulated by Munk as the result of extirpation. (This area lies in what Munk would call the "independent sensory region of the eye," not seeming to recognize that there existed a true motor area for the sphincter. This latter fact appears demonstrated by our very definite results. The zone is very small and accurately defined, but its stimulation, even with a feeble current, induced violent and long contraction, not only of the *orb. palpebrarum*, but apparently of *orb. oris*. Cf. Munk: "Ueber die Functionen der Grosshionrinde," Vierte Mittheilung, p. 64.) Transverse sections passing through this centre bring out the distinction between the motor and sensory areas. In that region shown to govern the sphincter the centrifugal cells are abundant, but laterally beyond its limits the centripetal predominate.

Upon the posterior aspect of the occipital lobe motor cells are numerous, as along the limbic lobe. Near the gyrus fornicatus the centripetal type pre-

vails, and in the external part of that gyrus, but internally groups of peculiar multipolar cells traverse the cortex in all directions, requiring further study and affording evidence of the extensive disturbance due to the fold producing the ammon's horn.

One familiar with the recent literature of this subject will note that the facts here adduced correspond closely with the conclusions of the most careful experimental observers. Meynert quotes with approval Munk's conclusion "distributing sensory areas over quite the whole of the cortical surface, and therefore terming the region from the occipital lobe to near the frontal margin the 'sensory sphere' of the brain."

It is strange, however, that such distinctions as are here claimed should not have been previously noted, and this naturally will cast doubt upon these statements, which, however, can be amply supported by camera drawings or actual sections. The greater avidity with which the centrifugal cells take the stain explains why imperfect preparations demonstrate one class only, and the wide distribution of the motor type may have prevented any serious search for another structural modification.

It may be left for subsequent examination to decide what becomes of Meynert's theory that "in order to explain volition it is only necessary to postulate sensations of innervation, and tactile and pressure sensations are thought to be a means of regulating the excitation of sensations of innervation" (Meynert, "Psychiatry," p. 145). But if we can demonstrate in the cortex afferent and efferent projection systems, and distinguish the cells occupied with psycho-motor and psychosensory processes, certainly a great step is taken toward an intelligible construction of cerebral mechanics.

THE DRY METHOD OF WOUND TREATMENT.—In an address delivered to the German Congress of Surgeons DR. LANDERER, of Leipzig, advocated what he calls the dry method of wound treatment, consisting of the use of pieces of dry aseptic gauze in place of moist sponges and irrigating fluids in surgical operations. Pieces of this gauze are also placed on any portion of the wounded surface not under manipulation at any time during the operation, for protection and as a hæmostatic. No fluid whatsoever is permitted to come in contact with the wound at any time. He approximates the surfaces carefully by deep and superficial stitches, but uses no drainage; neither does he leave the ends of the wound open.

He is scrupulously careful in rendering the surgeon's hands and those of his assistants, the instruments and the field of operations absolutely aseptic, and keeping them so throughout the operation. He has had primary union in ninety consecutive cases, including abdominal sections,

amputations of breasts, extirpations of tumors and glands, castrations, hydrocele operations, osteotomies, nerve-stretching, plastics, resections, amputations, etc. The advantages claimed for the method are: 1. The patient is not exposed to wet and cold. 2. The loss of blood is minimal. 3. Absorption of antiseptics is not possible. 4. Time of operation is decreased. 5. Rapid recovery, only one dressing being necessary, and that only if non-absorbable stitches are used. 6. Great convenience, especially for country practice. 7. Saving of surgeon's hands.—*Langenbeck's Archiv für Klinische Chirurgie*, vol. 39, heft. 1.

INOCULATION OF CARCINOMA.—(Dr. Wehr. Paper read before the Eighteenth German Congress of Surgeons, published in *Langenbeck's Archiv für Klinische Chirurgie*, vol. 39, heft 1.) DR. WEHR made a series of experiments upon twenty-six dogs by taking pieces of carcinoma of the vagina or penis and inoculating them subcutaneously through the shell of a trocar upon healthy animals. In most cases the nodules failed to grow, or if they grew at first they became atrophied later on; but in one animal, which was inoculated December 12, 1887, the tumors grew constantly until the animal died June 16, 1888. The autopsy showed the tissues surrounding the points of inoculation infiltrated with carcinomatous tissue, and the pelvis filled with nodules, some of which exceeding the size of a hen's egg. These tumors had occluded the urethra, causing a rupture of the bladder by overdistention, and this causing death from hæmorrhage. There were also metastases in the spleen and infected lymphatics in the chest.

SUBNITRATE OF BISMUTH IN ERYSIPELAS.—M. MARC SÉE has been using for several years a permanent antiseptic dressing of which subnitrate of bismuth is the essential element. During this time he has not seen the development of a single case of erysipelas when the dressing was used, although the surroundings of the patients were often such as to favor its appearance. In certain operations, where wounds are left which are evidently not in an aseptic condition, he abstains from the scrupulous use of antiseptic douching, and relies upon the bismuth, with which the wounds are filled, after which he applies a layer of hydrophile wadding. He has also had reason to believe that bismuth is a very useful application in cases of erysipelas already developed.—*La Semaine Méd.*, Aug. 28, 1889.

FRAULINA SCORBILIS IN DYSENTERY.—DR. APHEL employs the powder of fraulina scorbilis in doses of seven grains every two or three hours. It is indicated chiefly in adynamic forms of the disease.—*Los Avisos Sanitarios*.

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SATURDAY, OCTOBER 12, 1889.

THE PHYSIOLOGICAL RESISTANCE OF THE
PERITONEUM TO INFECTION.

In the past year hardly a more interesting series of experiments has been made in the interest of surgical pathology than those of RINNE.¹ Practically and clinically it has been demonstrated that the peritoneal cavity under certain unknown circumstances has the power of taking care of a vast amount of filth. It remained for Rinne to harmonize observed clinical facts with *a priori* deductions.

He found that large quantities of septic material and pure cultures of pyogenic bacteria were absorbed, although injected daily into the peritoneal cavity of animals, provided that the peritoneal surfaces were uninjured. The injections produced only mild symptoms in direct proportion to the quantity of septic material used, and in no case was there more than a moderate rise of temperature. The results were very different when there were coincident defects in the peritoneum, exposing the subperitoneal connective tissue to infection. Then there invariably appeared progressive suppurative peritonitis going out from the infected connective tissue, which usually terminated fatally.

The practical import of these experiments can hardly be over-estimated. They explain why the escape of pus into the peritoneal cavity from the rupture of a pyosalpinx is not necessarily fatal if the tube is promptly extirpated, and the wound and stump properly treated. They point out that the incision is the point of greatest dan-

ger in all abdominal operations, and they would indicate that too much care can not be taken in coaptating the peritoneal edges of the wound. They explain why the removal of abdominal tumors is so much more dangerous after adhesions have taken place, because the resulting denuded places offer less resistance to the invasion of septic bacteria. They explain the success of those operators who disregard the dictations of scientific bacteriology, and also the recovery of patients after abdominal section by horned animals. They teach us to consider cautiously the evidence presented by the statistics of operators, and await the demonstration of more exact methods as to the import of their results. They warn us that clinical evidence is inadequate to overthrow the deductions of experimental physiology and pathology, and that our time is provided with methods of precision which are yet imperfectly improved. They beckon the ambitious into fields of activity and thought far less crowded, though more promising than the operating room and the dead house.

The resisting and absorptive power of the peritoneum is beyond that of any other serous cavity. This is as we should expect. The peritoneal surfaces are only a line distant from the most filthy and prolific culture medium about the body. It is connected with this seething and turbulent mass by the most active absorbent lymph channels. Doubtless it is frequently invaded by septic bacteria from the intestinal contents. From these frequent invasions an immunity has been developed which has been perpetuated and transmitted by the working of the ordinarily recognized laws of evolution.

Again we are taught to consider the causes which determine the localization of infection, as more important than the quantity and quality of infective material. Doubtless traumatism is one of the most important of these causes, but we must not forget that the depression of the general temperature of the body, the interference with nutrition, and general *malaise* frequently observed after operations, are factors which may speak for the life or death of our patient. Not only should the abdominal section be made with the greatest attention to cleanliness, but the peritoneal edges must be accurately coaptated, the operation must be done with the greatest celerity and delicacy, and depressing influences of star-

¹ F Rinne, Langebeck's Archiv. für klinische Chirurgie. 39 pp. 1-60.

vation, over-medication, and deprivations of every kind must be avoided if we would eliminate all those causes which determine the localization of that infection, which is still the greatest danger the operator has to meet.

HYPNOTISM IN THERAPEUTICS.

This seductive method of treatment is still on the increase. Its exponents are for the most part more enthusiastic than ever. The therapeutical practice of hypnotism is no longer circumscribed by the narrow confines of France. It has spread throughout Continental Europe. Its progress has not been stayed by that watery Gibraltar, the English Channel, but sailing across has laid hold upon the insular conservatism of Great Britain. It has reached Germany, Sweden and Russia. It has scaled the Alps from all sides and wellnigh taken Switzerland by storm. It is more popular in staid Holland than in France. America alone has thus far escaped—but we expect it soon as we do all widespread contagion. Let us see, then, to what we may look forward. Hypnotism, not long since wrested from the hands of charlatanism, is held as a trophy by the medical profession. What we know of it in this country is mainly what we have learned of its employment by Charcot in the Salpêtrière. At present, however, there are in France two schools of hypnotism—that of Nancy, with Bernheim, Liébault and Liégeois as its principal champions, and that of Paris, where its practice has been developed under the influence of Charcot. The former school is by far the more radical, and its teachers claim the wider field of applicability for the method.

Nearly thirty years ago Dr. Liébault began to treat dispensary patients in Nancy by a system which he elaborated and termed "Treatment by Suggestion." In 1866 he published a book in which he gave a full description of his various methods, together with a report of cases successfully treated. Nevertheless he remained for many years a prophet without honor. In 1884 Prof. Bernheim, of Nancy, although skeptically inclined, began an investigation of the subject with the result of soon becoming a convert, and in 1884 he published his classical work, a second edition of which has recently appeared in this country, bearing the title, "Suggestive Therapeutics. A Treatise on the Nature and Uses of

Hypnotism." Hitherto the English language has been practically without a literature on this subject. To Liébault is due the credit of having founded a school of practice which has found representatives throughout Europe. The interest in the entire subject, which has been gradually increasing, and which has been fostered by discussions in the medical societies of various European cities, has finally culminated in a "Congress of Hypnotism" held at Paris, where congresses of all possible descriptions have been unprecedentedly numerous of late. At this Congress the forces were marshalled under the leadership of the aforesaid schools of practice. The Nancy contingent, with its radical views, was well equipped and ably generated by Prof. Bernheim, whose paper on the "Therapeutical Value of and the means of Inducing Hypnotism" served as a point of departure for a pretty lively dispute.

The principal differences between the two schools may be briefly explained. In the first place, the Nancy school believes that hypnotism is a physiological condition; the Paris school insists that it is a neurosis. The Nancy school thinks that pretty much all the manifestations of hypnotism are produced by suggestion and that the hypnotic state is so produced. The Paris school complains that hypnotism and suggestion are two separate things, and that Prof. Bernheim is so absorbed in *suggestion* that he has lost sight of hypnotism altogether.

These are some of the victories claimed by the champion of Nancy: Nearly all the tedious and rebellious cases of hysteria; cases of nervous anæsthesia, hyperæsthesia and amblyopia almost instantly relieved; pains from lead poisoning, neuralgia and rheumatism instantaneously or very quickly subdued; chronic rheumatic arthritis cured; pleurisy pains removed in one or several sittings; chorea quickly cured or greatly shortened in its duration; menstruation regulated, checked or made to appear at a fixed date; spinal disease ameliorated; an obstinate case of vomiting of long standing cured in two weeks; a case of cerebro-spinal sclerosis with palsy and staggering relieved for a long period; an old and most obstinate case of migraine with insomnia cured in three weeks, etc.

Charcot, however, holds very different opinions. Without wishing to deny that in cases of organic disease of the nervous system hypnotic suggestion

may, in certain cases, result in a degree of improvement, he is convinced that this occurs only by mere accident, and that, in such cases, the methods of suggestion have no claim to be regarded as therapeutical measures. On the other hand, in cases of hysteria in women and in individuals markedly susceptible to hypnotism in its stage of somnambulism, good results may reasonably be expected. As for hysteria in men, one must express one's self with greater reserve and beware of insisting upon a method which is very far from giving good results in all cases and may, indeed, produce exactly opposite effects with very disagreeable consequences. One should deal with hypnotism as with all other therapeutical measures; it has its indications and its contra-indications, and if one fails to employ it in a judicious manner the results are apt to be disastrous. Charcot's application of hypnotism has been confined to neurotic patients, and even with them he seems of late to be somewhat less enthusiastic than formerly.

It is, however, from the Nancy school that we receive the most glowing accounts of cures by hypnotism. As for the other side of the question, we hear but little from the opponents of hypnotism in France, where, if the subject is mentioned at all, it is spoken of in terms of praise.

In England a variety of opinion is expressed, much of which is favorable to the method. In connection with a paper read at the recent meeting of the British Medical Society by Dr. Voisin, of Paris, several English physicians reported successful cases, while others admitted having received a favorable impression by witnessing its action in England and France. Dr. C. L. Tuckey has also written an interesting brochure, entitled "Psycho-Therapeutics," a large part of which is taken up with an ingenious argument of inductive reasoning with a view to explaining the phenomena of hypnotism.

In Germany, although there is a growing interest manifested in the subject, there is not wanting an expression of wholesome caution and distrust, as indicated by recent expressions from writers of eminence, some of whom do not hesitate to pronounce hypnotism a very dangerous agent. Among those in Germany who are very decidedly opposed to hypnotism may be mentioned Prof. von Ziemssen, who, as the result of a series of experiments conducted by his assist-

ants, has reached the conclusion that hypnotism exerts little or no beneficial action even in cases of slight functional disturbance, while it is positively injurious to many patients. He believes that to employ the method as a therapeutical measure in cases of slight functional disturbance is like gunning for sparrows with cannon balls for ammunition, while its repeated application is apt to convert the milder forms of hysterical manifestations into the *grande hysteric* of Charcot; in the severer forms of diseases it is a mere substitution of one form of mental disorder for another, and is akin to curing one of the morphine habit by giving him cocaine. He trusts that the good sense of the medical profession in Germany will restrain it from countenancing so dangerous a procedure.

There can be no doubt that the elements of faith and expectancy are prime factors in the solution of this problem, just as they are in the somewhat allied methods of faith cure, mind cure, prayer cure, and, may we not add, in *classical* homoeopathy as well. Expectancy of cure in the mind of the patient is one of the most potent allies of therapeutics, and one which the physician ought never to disregard or underestimate. As for hypnotism itself, it will be well for all who are inclined to experiment with it to remember the failures and dangers that have already been encountered, and not blindly trust the voice of mere enthusiasm.

EDITORIAL NOTES.

HOME.

CHRONIC INVALIDISM.—An invalidism of unusual duration has appeared in the telegraphic columns of the daily press, as follows: Miss Ann Jones died recently at Jaybridge, Me., aged 87 years. She had been an invalid for seventy years and had been confined to her bed for sixty years. Her mind was clear to the last. We sometimes hear our medical friends use the careless tautology of "old chronic cases;" if it were permissible ever to use that expression it would be in such a case as this.

PRELIMINARY EXAMINATION OF STUDENTS.—The Regents of the University of the State of New York, through Professor Melvil Dewey, their Secretary, have been taking steps toward the carrying out of the law of 1889, which re-

quires certain students of medicine to pass examinations preparatory to entering upon their professional studies.

IMPROVEMENT OF JEFFERSON MEDICAL COLLEGE.—The Jefferson Medical College and Hospital at Philadelphia will soon add a building to the group already located at Tenth and Sansom streets, as the needs of the college and hospital have increased to such an extent that the Board of Trustees have found it necessary to have another building.

DR. R. A. LANCASTER, of Gainsville, Fla., has been elected President of the Alachua County Board of Health.

THE *Sanitary News* says: "The need of the times now is the thorough dissemination of the knowledge that sanitary science has made available for the promotion of the public health."

THE CHICAGO MEDICAL LIBRARY ASSOCIATION, incorporated last month for the purpose of securing and maintaining a library for the advancement of the medical and kindred sciences, held its first regular meeting on Oct. 4, at the Grand Pacific, at which the following were elected officers: President, Dr. N. S. Davis; Vice-President, Dr. Edward A. Lee; Secretary, Dr. Bayard Holmes; Treasurer, Dr. E. Ingals. Dr. William F. Smith was made a Director in place of Dr. Mary H. Thompson.

A GOOD LAW, and one which should obtain in every State in the Union, has been passed by the New York State Legislature. It reads: "Before the Regents of the University of the State of New York, or the Trustees of any Medical School or College within this State, shall confer the degree of Doctor of Medicine upon any person who has not received a Baccalaureate Degree, in course from a College or University duly authorized to confer the same, they shall require him to file with the secretary or recording officer of their University or College, a certificate showing that prior to entering upon the prescribed three years' study of medicine, he passed an examination conducted under the authority and in accordance with the rules of the Regents of the University of the State of New York, in arithmetic, grammar, geography, orthography, American history, English composition, and the elements of natural philosophy, and such certificate shall be signed

by the Secretary of the Regents, and countersigned by the Principal or Commissioner conducting the examination."

HUXLEY furnishes September with a reflection having an R in it, addressed to those who have recently resumed the consumption of bivalves: "Very few persons, I suppose, imagine that when this slippery morsel glides along the palate, they are swallowing a piece of machinery far more complicated than a watch."

FOREIGN.

POST-GRADUATE INSTRUCTION IN LONDON.—In a recent number of *The Lancet* appears the announcement that an effort will be made this year to inaugurate a post-graduate course at some of the London hospitals, like the Moorfields Ophthalmic Hospital, at which there are no clinical classes. The proposed course will be entirely practical and for qualified practitioners only; it will cover three terms of eight weeks each, and the fee will be ten guineas.

DEPOPULATION OF FRANCE.—The *British Medical Journal* says: "The movement of population in France indicated by the summaries published for 1888 in the *Journal Officiel* cannot be read without regret. They are summed up pithily by M. Georges Michet in a few words: Diminution of marriages, augmentation of divorces, decrease of legitimate births, increase of illegitimate births, excess of deaths over births in forty-four departments. In 1888 only 276,848 marriages were celebrated, 6,360 less than in 1883 and 8,719 less than in the period 1847-1860. The number of divorces was 4,708, or 1,072 more than in 1887, and 1,758 more than in 1886. The number of births has considerably diminished. In 1888 there were only 882,639 births; this is a diminution of 16,749 births compared with 1887, of 41,919 compared with 1886, of 42,000 with 1885, of 55,119 with 1884. The proportion of illegitimate births, which in 1882 was 7.5 per cent., is now 8.5 per cent. It is very unequally distributed; thus, in the Department of the Seine it is 25 per cent., while in Brittany it is 2 per cent. But for the afflux of illegitimate births, the French population, says the official report, would decrease. The excess of births over deaths amongst the foreign residents in France is 11,000, one-fourth of the total excess for the whole population."

TOPICS OF THE WEEK.

MEDICAL SCHOOLS IN CANADA.

At the annual meeting of the Canadian Medical Association, held at Banff, N. W. T., August 12, 1889, the president, DR. H. P. WRIGHT, in his annual address, refers to Canadian Medical Schools as follows :

"Of our medical schools in Canada we have good reason to feel proud. They are under the care and management of thoughtful, hard-working and self-sacrificing physicians and surgeons. In most instances the teachers are necessarily active practitioners, for few in our ranks have private means, and the instructors' pecuniary rewards are but pittance. As a country we do feel proud of our schools, and, as a people, grateful to our teachers; but, we know, that as institutions they are not yet perfect. These imperfections are not faults controllable by the teachers; they are the silent appeals to the wealthy and philanthropic. To quote from Dr. Alfred L. Loomis in his magnificent address to the New York Academy last year: "Why is it that men of wealth do not realize their great opportunities for wise liberality in this direction, liberalities which will not only shed lustre upon themselves, but will mitigate the sum of human misery as certainly, and in many ways far more effectually, than our hospitals and charities for the sick and suffering poor." He blames the profession for not having tried to direct the stream of accumulated wealth in this direction, for "next to religion, education is the cornerstone of our civilization." Then, after alluding to the noble gifts recently made to some of the medical colleges, he is inspired by the hope that the stream of emotional benevolence for the sick and suffering is being turned into intellectual channels for educational needs. We have not yet to complain of emotional benevolence, as they have in the city of New York, where they have so many hospitals and dispensaries that patients are at a premium; but we know that public attention has not been sufficiently directed towards the endowment of chairs in our educational institutions, for the provision for scholarships to help on the needy and industrious student, or for the establishment of a general fund for the purpose of erecting and maintaining laboratories at different points to further original investigation and research. All these are necessary if we are to have a perfect system of medical education 'in order that those who teach may, by personal and familiar contact, gain such intimate knowledge of each student and firm control of his mental processes' as will enable them to become teachers in the good old Anglo-Saxon sense—to be educators, and not simply instructors 'pouring out their daily dole of wisdom into unreceptive ears.' "

Within the past year several strong appeals have been made through our medical press, in favor of more practical instruction, and that every student may have books in his possession giving a careful digest of the subject he is studying. The teacher's duty, in so far as the method of imparting knowledge is concerned, is changed. When books were scarce and biology was a nursling twenty or twenty-five years ago, didactic teaching was a

necessity and note books were valued possessions. Now, our teachers should be expert demonstrators, appealing largely to the senses in the hospital wards and laboratories.—*Montreal Medical Journal*.

WAKEFULNESS IN NEURASTHENIA.

A wide range of opinion on the management of this condition found expression at a recent meeting of the Epidemiological Association. The use of drugs, with the exception of sulphonal, perhaps, did not find much favor with the members. Some of them had found that their patients of this class slept when they were at the seaside, while others recommended the Colorado atmosphere. Some patients had been found to be able to sleep at sea, but not on land. The weight of evidence seemed to favor the resort to mountain air for patients who were anæmic, with a presumption in favor of sea air for those who were plethoric. Dr. Solly, of Colorado Springs, has found that a large proportion of anæmic neurasthenics find sleep on the mountain heights, but this cannot be said of the entire class. It is not improbable that other conditions besides those of climate enter into the account where the patient travels from our Eastern cities to the Rocky Mountains in pursuit of sleep. The jaded matron leaves the worries of the household, and the business man, broken down by the rush of daily cares, finds many things changed besides the atmosphere among the far Western altitudes. Still, as a rule, the climate gets all the praise when an improvement takes place. Business men from the East report a larger percentage of recoveries than the matrons, however, probably because fewer of their anxieties can follow them. Improvement in the assimilation of food, it should not be forgotten, goes a great way toward sleep production in those who are affected with derangement of the nervous system; and this is one of the frequent accompaniments of any change of scene and environment. Not that there is always any marked increase of appetite or in the amount of food taken, but there is an appropriation of the food by the nervous centres, to their consequent strengthening. It is often a prominent feature in neurasthenia that the food may be taken in and digested fairly well, but stops short somewhere in its distribution to the tissues and is largely wasted. Ordinarily, when this waste ceases there is a corresponding abatement of wakefulness and other neurotic symptoms.—*New York Med. Journal*.

THE FUNCTIONS OF THE CEREBELLUM.

Is the cerebellum an organ for the storage of cerebral events which have become automatic? Do we first of all receive with the cerebral cortex and then practice with the same brain-bark, and afterward relegate to the cerebellum, as to a limbo, those things of which we are so tired of being conscious? Are all performances of the cerebral cortex conscious acts, and those of the cortex of the cerebellum unconscious? And so might questions, more or less unanswerable, be postulated without end. The functions of the little brain are scarcely known at all; even the dependence of the equilibrium on its existence may be called in question on the data supplied by

pathology. It is perfectly certain that no obvious signs of nervous disease need exist when the lateral lobes are the seat of even extensive mischief. Some regard the cerebellum as the terminal organ of all visceral sensation, and on this assumption it has been thought that the curious perturbations in visceral epilepsy are to be ascribed to perversions of the vitality of the gray matter of the little brain. Anything is possible for the cerebellum. The most gifted imagination might guess strange things, yet pathology could perhaps find exact counterparts.—*Lancet*.—*N. Y. Med. Journal*.

HOW THE LEPROSY BEGAN IN HAWAII.

The Hawaiian consul in London sends an interesting sketch of the history of leprosy in Hawaii and the leper's island of Molokai. The first known case of true lepra (I cannot speak as to elephantiasis) occurred, he writes, in the islands more than forty years ago.

It has been supposed to have been introduced by a Chinese; but this was never established; and it may here be remarked that the ratio of leprosy among the Chinese residents is less than that among the natives. In twenty years the disease has attacked a large proportion of the Hawaiian population. In 1865 as many of the lepers as could be induced to go were taken to a beautiful valley in the island of Molokai, not to be called, as was that of Rasselas, a "happy valley," but fertile and eminently adapted to its purpose. Before it was the ocean, and landward the plain was shut in completely by a mountain range, in which were precipices 3,000 feet high. Doubtless at first some disorder and a want of organization existed. But the Hawaiian Board of Health began its work and improved matters. Pure water was brought into the settlement from sources a mile distant in abundant quantities, and was distributed by exits in nine different situations.

In the year 1873 Mr. Ragsdale, a layman, gave an example of self-sacrifice by volunteering to act as superintendent to the leper asylum. He did efficient work there, but did not live long. It is to be admitted that the housing of the sufferers was for some time bad and insufficient. Yet, in 1874, Mr. Widemann, President of the Board, asserted that, "in a material point of view, the people were better off in Molokai than most natives of the islands, and also better, with few exceptions, than they ever were in their own homes. Parcels of land and wooden houses had been bought for the increasing population, and 6,000 feet of waterpipe had been laid." Next the settlement was divided, and the two establishments of Kalawao and Kalaupapa were placed at a considerable distance from each other. In 1879 and 1880 there were in the former of these places 802 lepers, of which 458 were men and 344 were women. There has always been an excess of cases among the males. The largest number at any one time appears to have been 1,000. In the year 1874 the young Belgian priest Damien cast in his lot with that sad society, and was appointed assistant superintendent. The lepers cultivated plots of ground and occupied themselves in such manual labor as they were capable of.

The biennial grant of the government is \$100,000 for

Molokai and \$35,000 for the establishment on the Island Oahu. There is a resident surgeon at Molokai.

The present king and queen have shown great interest in and sympathy with the lepers. Three years ago they paid a memorable visit to them, and a hymn written for the occasion by the king was sung enthusiastically by the patients. I have understood that the resident medical officer, Dr. Hoffman, is himself affected by the disorder. I will add that the ratio of deaths in a year is 58 per 1,000, and the disease runs its course after first incubation in about eleven years. I need hardly say that all kinds of remedies are being tried on the sufferers, and I must express my thanks to the English government, who procured at my request from the government of India, a large quantity of Gurjun oil, which I forwarded to Hawaii. It has been thought that this oil is the most potent agent, if not for the cure, for the restraint and alleviation of leprosy.

A LEFT LUNG WITH AN ACCESSORY LOBE.

DR. WM. A. EDWARDS, of San Diego, reports a case as follows: The lower lobe is of the usual size and formation, but the upper lobe is sub-divided at about its middle into two distinct lobes; the lower of these is remarkable in that its so-called cardiac loblet is unduly developed, encroaching upon the cardiac triangle, and removing the heart from the chest wall. The supernumerary lobe is formed altogether at the expense of the upper, which is not at all decreased in size, but is simply fissured throughout its upper segment; the increase in size is occasioned wholly by the prolongation of lung tissue above referred to. The entire lung was functionally active, and its histological character the same throughout. In 1885 Dr. Edwards reported the second case on record of an accessory lobe of the right lung. Accessory lobes of the left lung have been more frequently observed.—*Pacific Medical Journal*.

THE JOHNS HOPKINS UNIVERSITY.

PRESIDENT GILMAN has authorized the announcement that there is no foundation for the rumor that the university is in financial difficulties. The salaries of the president and professors have not been cut, and several new appointments have been made. While it is true that the income from the Baltimore and Ohio Railroad bonds has been cut off, yet there is an accumulated income from former years, the receipts from tuition average \$40,000, and \$108,000 is available as an emergency fund during the coming three years. Within six months the university has received \$300,000, and other gifts are expected. The hospital funds are distinct from those of the university, and are so invested that the income is an assured one.

ST. JOHN'S GUILD.

The report of the past season's work by the St. John's Guild, of New York, shows that over 30,000 children and mothers were received on the floating hospital, and 1,500 sick children and others were treated at the Cedar Grove Seaside Hospital belonging to the Guild. The expenses exceeded the receipts by \$3,000.

PRACTICAL NOTES.

AGARIC ACID: A NEW DRUG FOR NIGHT SWEATING.

Some years ago a substance derived from the well-known *Agaricus albus* was introduced as a sweat-checking agent in phthisis (*Practitioner*, xxix, 321). It was looked upon as an alkaloid body, and received the name of agaricine. This, however, has now been found to be an impure substance, and Professor Schmiedeberg has recently extracted from it a triatomic dibasic acid, to which the name of agaric acid has been applied. This is a white, silky, crystalline substance, scarcely soluble in cold, but readily so in boiling water. Hofmeister has recently investigated its physiological effects, and shown that its action is upon the centres in the medulla, especially the vagus and vaso motor. It possesses no mydriatic action; on the contrary, instillation of the sodium salt of the acid produces slight narrowing of the pupils, probably from mechanical irritation. The influence of the substance on the secretion of sweat is not a central one, but the result of an action on the secretory structures. Klemperer has tried it in very many cases of profuse sweating in Professor Leyden's wards. The dose given was usually $\frac{1}{6}$ gr. in pill, administered in the evening about 6 o'clock. If the action was insufficient, as many as five pills were given. In most cases the result was very satisfactory, even in those cases where atropin failed, and it was unaccompanied by any unpleasant symptoms.—*Therapeut. Monatshefte*, June, 1889; *The Practitioner*.

CARBOLIC ACID IN WHOOPING-COUGH.

DR. ROBERT LEE wishes to emphasize the fact that the proper mode of administering carbolie acid in the treatment of whooping-cough is in the form of vapor, and by inhalation; and that the only way of effectively doing this is by boiling a solution of carbolie acid in water in the proportion of 1 to 1.5 per cent. When such a solution is boiled, the vapor is found to contain the acid in the same proportion—a fact not generally known. When used in the way referred to, carbolie acid is, in the opinion of Dr. Lee, the best remedy for the relief of the cough and other laryngeal symptoms.—*Brit. Med. Journal*.

CLINICAL USES OF HYOSCINE.

MM. MAGNAN and LEFORT have been making some experiments with hyoscin prepared by Landenburg. This drug was first used in 1880, and since then MM. Gley and Rondeau have shown how it produces mydriasis and paresis in dogs, and Dr. Mitchell Bruce (*Practitioner*, xxxvii, 321) has pointed out its calmative effects clinically,

as well as the symptoms of failure of the heart and Cheyne-Stokes breathing that may be produced by doses as small as $\frac{1}{100}$ gr. MM. Magnan and Lefort have found excellent results in five minutes from $\frac{1}{60}$ gr. in acute mania. The patient loses his morbid activity and grows silent; then mydriasis and loss of power of accommodation come on, and he goes to sleep without further inconvenience for five or six hours—a better result than can be got from chloral or any other drug of the sort. It can be used in delirium tremens, in a child with severe local spasms, or as an injection of $\frac{1}{20}$ gr. in the case of an hysterical woman with profuse sweating of hands and feet, which it will check for several hours. M. Laborde has found that, with perfectly pure hyoscin hydrochlorate, doses not more than a tenth part of what MM. Magnan and Lefort had used were quite sufficient.—*Progress Méd.*

EMMENAGOGUES AND PREGNANCY.

DR. L. ATTHILL finds that, in his own experience, some of the so-called emmenagogues are practically devoid of special action upon the uterus. For many years he has made a practice of administering ergot to patients threatened with abortion, hæmorrhage being present but uterine action not having been excited. He finds that it checks hæmorrhage without exciting undue uterine contraction, and accordingly he does not hesitate to give it to pregnant women if for any reason it seems to be indicated. He has often administered ergot before labor in cases where there is a predisposition to post-partum hæmorrhage. In none of these cases has labor set in earlier than was expected, while in two or three cases it seemed to have been delayed. From personal experience he believes that iron, quinine and strychnine can be administered to pregnant women in ordinary doses with perfect safety.—*Brit. Med. Journal*.

PEA REMOVED FROM AN EAR AFTER IT HAD BEEN THERE THIRTY-TWO YEARS.

DR. W. F. WRIGHT, of Leavenworth, reports the case of a woman, 40 years of age, from whose ear he recently removed a pea which had been there for thirty-two years. The patient herself, when a child, had introduced a pea in each ear, one of which was removed at the time. She suffered from vertigo nausea and loss of hearing in the ear which contained the pea. Since the removal of the pea hearing has been greatly improved and the other symptoms have disappeared.

PREVENTION OF TYPHOID FEVER.

With reference to a circular recently issued by the Kentucky State Board of Health, in which attention is called to the increasing prevalence of

typhoid fever, and the advice given to boil all suspected water before using it, or to guard against contamination by using properly stored cistern water, the *New Orleans Medical and Surgical Journal* takes occasion to point out the immunity from this disease enjoyed by the citizens of New Orleans. The people of New Orleans of course use cistern water, not from choice but from necessity. The editor of the journal referred to says: "As typhoid fever is mainly disseminated by drinking water, we can feel confident that this horrible disease will never become a fruitful cause of deaths here as long as we adhere to our good and much-abused method of storing drinking water." It is not denied, however, that the water supply of New Orleans contains much organic matter and myriads of algæ. Our present authority also claims that having made a virtue of necessity in using open drains instead of sewers, and thereby escaping from the dangers of sewer gases within doors, New Orleans has at last awakened to the idea that "it is as good a city (for a large city) to live in as any in the Union, provided that the plainest laws of hygiene be obeyed."

THE TIME DURING WHICH ALKALOIDS REMAIN UNALTERED IN THE BODY.

This subject has been investigated by POLLACANI (*Deutsche Med. Zeit.*) who found that no trace of digitaline or santonine could be discovered after the lapse of four months, while atropine, daturine and physostigmine could be detected thirteen months after. Of codeine a trace was still present after the latter interval. Morphine and picrotoxine could be recognized after twenty-seven months, aconitine and cicutine after thirty-four months, and veratrine after thirty-nine months. Curarine appeared unaltered after twenty-eight months; after thirty-nine months the physiological test for this substance was ineffectual, although the characteristic chemical reaction could still be called forth. The author concludes from these experiments that the vegetable poisons are not so quickly destroyed by bodily putrefaction as has been hitherto supposed.—*Druggists' Circular*.

ANTIPIRYN.

The use of antipyrin is contra-indicated:

1. In all cases of cardiac weakness.
2. In diphtherial affections in which there is evidence of myocarditic lesion.
3. After exhaustive hæmorrhages.
4. During menstruation and dysmenorrhœa.
5. In catarrhal pneumonia generally, and in lobar pneumonia when there is œdema of the lungs—heart failure.
6. In the later stages of tuberculosis.

7. In all cases of great debility and exhaustion, and in the later stages of long continued fevers.

It is believed that the foregoing contra-indications with regard to the administration of antipyrin and similar medicaments will receive the approval of physicians generally.—HUMPHREYS, in *The Practitioner*.

ETHEREAL TINCTURE OF IRON IN CHRONIC NEPHRITIS.

DR. WYSS, of Geneva speaks very highly of the ethereal tincture of iron, or Bestucheff's tincture, as it is usually called on the continent, in cases of chronic Bright's disease. Five or ten drops of this preparation in a glass of water were given to a large number of patients from three to six times daily, the result being that in more than half of the cases the albumen entirely disappeared from the urine, and the œdema and other symptoms were also cured.

RESORCIN IN ECZEMA.

DR. UNNA strongly recommends in the treatment of seborrhœal eczema an application of linen cloths soaked in solution of resorcin. His formula is resorcin and glycerine of each 10, alcohol 180, mixed and diluted with 4 parts of water. In eczema with much secretion he applies a thin layer of cotton wadding soaked in the solution, which is then covered with some waterproof material, and kept in position with a bandage.

GURJUN OIL IN LEPROSY.

A systematic trial of the gurjun oil treatment, from which Father Damien and several members of his afflicted flock at Molokai are said to have derived benefit, is now being made at the leper hospital at Agra. Six typical cases have been selected, and the results are being closely watched by the medical officers of the hospital. Their report will be looked forward to with interest.

THE GLYCERINE TAMPON IN THE VOMITING OF PREGNANCY.

DR. S. B. KIRKPATRICK blistered the cervix in an obstinate case of vomiting in a pregnant patient, and observing that the patient was not relieved until the serum was formed and discharged, conceived the idea of procuring a watery discharge by the use of glycerine. He accordingly inserted into the vagina a tampon saturated with glycerine. The distressing symptom was at once removed and, on its return at intervals, was always relieved by the glycerine tampon.—*Texas Com. Rec.*

SOCIETY PROCEEDINGS.

Medical Society of Virginia.

FIRST DAY—TUESDAY, SEPT. 3, 1889.

The twentieth annual session of the Medical Society of Virginia convened in Roanoke, Va., at 8 P.M. Tuesday, September 3, 1889, the President, Dr. E. W. Row, of Orange, Va., in the chair. The address of welcome was delivered by Dr. A. Z. Koiuer, chairman of the local committee of arrangements; Dr. Thomas J. Moore, of Richmond, Va., delivered the annual address, selecting as his subject, *Man and His Development*.

SECOND DAY—WEDNESDAY, SEPT. 4.

Dr. JOHN A. WYETH, of New York, read a paper on

THE STATUS OF COCAINE IN SURGERY.

After a note or two on the history of cocaine as a surgical anæsthetic, in which he accords to Dr. Karl Koller, of New York City, the credit due for its introduction in eye surgery, and to Dr. J. Leonard Corning, of New York City, the credit for its practical application to other surgical purposes than anesthesia for eye surgery, he remarked first upon its dangers, due to idiosyncrasy, etc. Its dosage is uncertain, differing widely not only in different individuals, but in the same individual at different times. The general rule should be to begin with the minimum dose, gradually increasing it, always watching the pulse, face, respiration and pupil. In small doses it increases the number of respirations and is a cardiac stimulant; in large doses it arrests the heart in diastole and the action of the respiratory muscles. Cocaine is never applicable to children under 10 or 12 years of age. In his several hundred applications in adults, in all parts of the body, he has several times observed pallor of the face and fainting, but due, most probably, to the patients being overcome by the sight of blood, etc. In some, however, it was due to absorption of the drug. Exhilaration is not an uncommon symptom, and in rare cases it increases to boisterousness. In one instance convulsive movements occurred, episthotonos being rather well marked. In another case a convulsion occurred fourteen hours after a gradual injection of 30 minims of a 4 per cent. solution of cocaine (gr. jss). In many cases, when not applied about the eye, dilatation of the pupil occurs, indicating absorption by the blood. For hypodermic purposes he uses 20 grains of cocaine and 3 grains of boracic acid, dissolved in an ounce of distilled water—approximately a 4 per cent. solution. A stronger aseptic solution is equal parts of distilled water and saturated solu-

tion of salicylic acid. Always dissolve cocaine in water free from lime.

Following these general considerations Dr. Wyeth gave interesting specific directions for the employment of cocaine in various operations of minor surgery, including amputation of the fingers, incision of felons, removal of finger nails and tumors, and operations about the eye, mouth, nose, urethra, anus, scrotum, etc.

Dr. HUNTER MCGUIRE, of Richmond, Va., said that he did not think that Dr. Wyeth had dwelt sufficiently on the dangers of cocaine. He had used this remarkable agent almost every day for the past five years, but he had come very near killing one or two patients with it—so uncertain is its paralyzing effect in some cases, which cases cannot be foretold until the danger is recognized to be at hand. He had read that Dr. Sims had injected a few minims of a 20 per cent. solution of cocaine muriate into the male urethra, and in twenty minutes his patient was dead. Dr. McGuire said that he had cocaineized a great many children without observing the very serious effects referred to by Dr. Wyeth; in fact they seem to stand cocaine as they do chloroform anesthesia—very well. But there are objections to cocaine. Undoubtedly it interferes with the repair of wounds by the first intention. Another thing—during the session of this society two years ago, in Richmond, he heard a distinguished authority in such matters, then a resident of New York City, affirm that a cocaine habit, in the sense in which the term habit is applied to the whisky habit, the morphia habit, etc., could not be established. But he is certain he has seen a case or two of the *cocaine habit* in patients who have come under his care.

Dr. WYETH remarked, in reply, that he endorsed everything that Dr. McGuire had said—in fact the dangers of the indiscriminate use of cocaine are very considerable. He did not mean to imply the idea in his paper that the danger of cocaine, when used with children, was in the drug itself, but in the imperfect manner in which it is generally administered to them, because of their struggling to resist its administration, and the peculiar sensation, or loss of sensation, in the part which frightens them.

MEDICAL REFORMS, WITH SPECIAL REFERENCE TO THE PROFESSION OF VIRGINIA,

was the subject of the address by the President, Dr. E. W. Row, of Orange, Va. He advocated the establishment of a State General Hospital, to be sustained by the State, just as are the asylums; that matters of professional interest connected with the management of such an institution should be placed under the control or direction of the Medical Society of Virginia. In other words, he thought that the medical affairs of the State should be directed by the medical men of the

commonwealth, just as are the legal affairs by the legal men, etc. The medical profession has shown its ability to manage such matters as belong to it, as evidenced by the excellent work done by the Medical Examining Board of Virginia—the creature of this society. The insane hospitals and like institutions should be more directly under the supervision of this society, so far as the medical affairs connected with them are concerned. It is the duty of this society at this time to put itself to work to secure for the State Board of Health an annual appropriation from the State sufficient to pay all of its necessary expenses, it appearing that the law establishing the Board, some seventeen years ago, being altogether satisfactory, with the exception that the law very foolishly concludes with some such proviso as, “provided the said Board of Health shall not be an expense upon the State.”

The next order of business was the discussion of the selected subject,

CROUPOUS PNEUMONIA.

The appointed leader, DR. B. L. WINSTON, of Hanover, Va., stated that he would confine his remarks to uncomplicated cases of the disease. The *diagnosis* is not difficult, although sometimes the disease escapes detection unless resort is had to the physical signs. Pain is probably never present unless more or less pleurisy complicates the pneumonia. Rusty colored sputa, though pathognomonic when seen, does not by any means occur in the majority of cases, according to his experience; and on this point he thinks the text-books should be corrected. The *causes* may be classed as either specific, exciting, or predisposing. The view that pneumonia is due to a specific organism does not meet with common approval. Dr. Winston thinks that pneumonia is not simply a local inflammation of the lung, but that this is but an expression of a general disease, and that the pneumonia deserves no higher classification than the intestinal ulcers of typhoid fever. Croupous pneumonia is not produced by extension of inflammation, but in such cases lobular pneumonia is the result. It is not produced by inhaling irritating gases, nor by traumatism, nor by “cold,” as are other inflammations of the air passages. It is a self-limited disease and frequently occurs as an epidemic. The common asthmatic tendency cannot be due to the height of the fever, nor to cardiac weakness, nor to the amount of lung consolidated (for the amount invaded is often very small). It is, at least, certain that the cardiac failure in no way corresponds with the severity of the other symptoms. It seems to the speaker that the tendency to heart failure, which is the most alarming symptom in uncomplicated cases, is due to a morbid agent acting on the nerve centres. But the exact cause of croupous pneumonia is a sub-

ject for further investigation. The germ theory may or may not be true. The *predisposing* causes are age (under 60), the male sex, the negro race, certain diseases, as typhoid fever, winter and spring seasons, etc. The *exciting* causes are, in general, such things as tend to lower the vital powers, as exposure to inclement weather, insufficient clothing, neglecting the wearing of flannel winter and spring, etc. It is more common south than north, pneumonia being almost unknown in the frigid zone. During the winter and spring almost every article of food has the stamp of age upon it, and it seems more probable that the character of the food then taken, when the vital powers are at their lowest, contribute most largely to the development of the disease. As to *treatment*, most every drug has been tried; yet the mortality among adults is second only to that from consumption. Marayliona abstracts from five to ten ounces of blood on the fourth or fifth day, when the heart is on the eve of being overpowered by the pneumonic toxic matter; but Dr. Winston thinks stronger evidence needed to justify resort to such bleeding on such occasions, although there may be occasionally times when some venesection is useful. He also thinks large blisters of doubtful propriety, although he has seen blisters relieve pain. Calomel has no place in the treatment of croupous pneumonia; aconite in the commencement, and quinine, given early as an abortive, may be useful; but he has gotten the best results when he has given the least medicine. Hot poultices, opium to relieve pain, stimulants when needed, food, hygienic measures, and, above all, skillful nursing, will be all that can be done in uncomplicated cases.

DR. H. C. BECKETT, of Scottsburg, Va., also read a paper on the subject. The specific cause of croupous pneumonia is undetermined. No age has either a notable proclivity to the disease, nor is any age exempt. It is perhaps most frequent between the ages of 20 and 40, and after 60. In adult life it occurs in males three times as often as in females; in females it occurs most frequently at the catamenial periods. Outdoor laborers are more liable than indoor workers. Habitual alcoholic drinkers, malarial subjects, convalescents from severe acute diseases, etc., are most liable to the disease. Erysipelas, measles, diphtheria, small-pox, etc., are predisposing causes. Traumatism, especially in the aged, a previous attack of pneumonia, are also predisposing causes. It often prevails as an epidemic in the mountainous regions of the South. The first five months of the year are its season. Thus it is seen that all things predispose to pneumonia that depress vital action. Dr. Shaw, of St. Louis, believes that perturbations of the vaso-motor centre in the medulla causes pneumonia by impressions conveyed through nerves connecting this centre with the stomach. As to *treatment*, use stimulants or

depressants, as required. If both lungs are involved, so as to leave little breathing surface, bleed. In such cases venesection affords immediate and remarkable relief. Large hot poultices over the lungs reduce blood pressure, while the heat stimulates the heart. Aconite is preferable to veratrum; but he prefers antifebrin as the antipyretic, to be followed by quinia, which latter he considers the sheet anchor in pneumonia. He usually prescribes 5 grains every four hours until the fever breaks. In the second and third stages he generally combines ammonia, carbonate and digitalis. The early exhibition of a large dose of calomel is useful. Opium is useful to allay pain and restlessness. Expectorants have no place in the treatment of pneumonia. Blisters at the beginning of the third stage hasten resolution. Alcohol is essential as a food and to sustain the heart. Many believe that the disease is contagious, and that four days is the period of incubation.

DR. LEWIS G. PEDIGO, of Roanoke, Va., read a paper entitled,

SEDATIVE DOSES OF CALOMEL IN ACUTE CROUP-
OUS PNEUMONIA.

He stated that the title of his paper referred to doses of 30 grains and upwards. He gave a history of the use of this treatment in various acute diseases by a few members of the profession for years past, and then explained the method of administering the drug in this treatment. He reviewed the condition of the secretions and the various indications of treatment in pneumonia, gave a systematic and detailed account of the numerous and apparently diverse effects of the large doses of calomel, classified these effects, and showed how they were all dependent on two general principles, namely, stimulation of the secretions, and sedative influence on the nerves. He argued the adaptability of these effects to the chief indications in pneumonia. The entire paper was based on clinical experiences, and one case was briefly reported to illustrate the treatment advocated. The important effects claimed were the promotion of the salivary, gastric, hepatic and intestinal secretions, and unloading of the portal circulation (followed by improved digestion and assimilation), increased and improved action of the kidneys and skin, loosening of the bronchial and pulmonary secretions, relief of cough, lowering of temperature, and promotion of sleep.

Honorary Fellow, DR. BEDFORD BROWN, of Alexandria, Va., gave a

RÉSUMÉ OF HIS PERSONAL EXPERIENCE OF FOR-
TY-ONE YEARS IN THE TREATMENT OF
CROUPOUS PNEUMONIA.

During this period of time, he has seen four or five different methods of treatment adopted and practiced, and finally discarded. First, as to the

depletory plan, at first it was used in every case; then only in certain cases, and finally it was entirely discarded. Then came the mercurial plan, in which calomel in small doses, with Dover's powder, with mercurial inunction, were used until ptyalism occurred. The great majority of cases recovered under this treatment. Then followed the sedative treatment, consisting of the use of veratrum viride, aconite, and ultimately digitalis. The sedative treatment of Norwood gave birth to all of our subsequent ideas of sedation. This was an advance on the pure depletory treatment, and resulted in real good. Then again came the stimulant treatment. This was a still further advance, and has brought more and better fruits than any other single treatment. While this also may be modified and combined with elements of other treatments with advantage. Dr. Brown has not derived benefit from the pure antipyretic treatment. He has, in former years, seen much of the epidemic forms of typhoid pneumonia, with a tendency to collapse which was constant and great. In this form he has used large quantities of whisky—a quart per diem—carbonate of ammonia, tincture of nux vomica, and chloroform internally. In this form he has also used, in connection with stimulants, solution of the acetate of ammonia, tincture of nux vomica, tincture of chloride of iron, with benefit. Dr. Brown does not think, from his long experience, that adherence to any one single routine treatment exclusively will give as good results as the mixed treatment, combining some of the good features of all; but never forget the value of stimulants and nourishment. He has seen cases of pneumonia with slight fever, slow pulse, moderately excited respiration, etc., recover without medication.

DR. J. H. NEFF, of Harrisonburg, Va., said that croupous pneumonia is a disease of specific origin, running a regular course; but no one knows the exact character of this poison. He has always believed that it was not a purely local disease, but a systemic disease of specific origin, having its local manifestation in the inflammation of the lung. It prevails mostly in populous districts, especially as one approaches the tropics. He agrees with Dr. Winston as to the exciting causes. The predisposing causes are to be found in the constitution of the patient and season of the year. The disease being of a specific character, must run its course, and therefore he has had no faith in any abortive plan of treatment. A great many cases run their course to recovery without any treatment whatever, other than the ordinary attentions of humanity. He has seen antipyrin do just as much in curing pneumonia as calomel. In children, he always uses a light flannel jacket, lined inside with oil silk. He never gives a dose of calomel now. He does not condemn the use of aconite or veratrum viride;

but he finds good diet, etc., a much better class of remedies. It is of the first importance to sustain the strength of the patient, and especially his heart.

Fraternal Delegate, DR. J. G. WILTSHIRE, of Baltimore, Md., said that studying the subject of croupous pneumonia after Lépine, Sévestre, Charcot, etc., one must accept the theory that it finds its origin in a specific pathogenic germ; yet it cannot be denied that there are certain meteorological conditions that stand in a strong causative relation to its production—it occurring more frequently in low temperature—one acting as a specific, the other as an exciting cause. We are constantly exposed to the invasion of the pneumococci; but for the want of the necessary conditions to render the mucous membrane of the lung a suitable soil for their culture and growth, it is able to resist them for a time, only to yield when such exciting causes as cold and traumatism supplement the specific influence of the germ. Apropos of the theory that the pneumococci have other habitats than the lungs, he called attention to the study of Sévestre of an epidemic of broncho pneumonia, complicating cholera infantum and other enteric troubles, in which he found the microbes of pneumonia in the intestinal tract, whence they were carried to the lungs by the lymph channels. The treatment of croupous pneumonia calls for heart sedatives, heat and moisture in the form of hot cloths; these, if used in the first stage, may abort the disease. Should it, however, pass into the stage of red hepatization, a supporting and stimulating plan should take the place of sedative one. Watch the temperature and heart as closely as the powers of the patient. Alcohol is important in the second and third stages. Quinine and antipyrin, when used together, are the best antipyretics. They not only reduce the temperature, but preserve the powers of the heart. Carbonate of ammonia does the twofold work of aiding in liquefying and expectorating the fibrinous deposit, and keeping the heart's force up.

DR. HENRY M. PATTERSON, of Staunton, Va., remarked that if this is a specific disease, the treatment given has certainly been at variance with this idea. He does not believe that it is simple hyperæmia of the lung. The gravity of the attack depends on the amount of exudation. How to remove the engorgement is the question. At this period is the time to abort the disease if possible. He may be ranked as behind the times; but his success with the lancet now is just as good as it was when he began practice in 1851; and that success is just as good as is that by other plans of treatment now in vogue. He gives alcohol in the second stage in almost every case, both for its food and stimulant qualities. He has had some remarkably satisfactory results from ergot.

DR. HENRY V. GRAY, of Roanoke, Va., said that the important question is, What produces the great depression of the system in cases of croupous pneumonia? If due to exudation in the alveoli, that condition needs prompt attention.

DR. GEORGE TUCKER HARRISON, of New York, N. Y., read an elaborate Memoir of the late Dr. James L. Cabell, of the University of Virginia, which was ordered to be incorporated in the Report of the Necrological Committee.

DR. E. T. BRADY, of the Southwestern Lunatic Asylum, at Marion, Va., read a paper entitled:

MENTAL ACTION—MATERIAL ACTION.

The Doctor stated that he would treat the title as a fact considering it established by the following three propositions:

1. That mental impressions involuntarily originate physical action, and that material impressions give rise to this involuntary mental action.
2. That loss of cerebral substance is followed by loss of physical or expressional function, and that disuse of mental function is followed by a corresponding atrophy of cerebral substance.
3. That abnormalities of organic function, have as their sequence, abnormal ideation.

He devoted his paper to the support of these propositions. In support of the first proposition, he cited the phenomena of sweating, nausea and vomiting from fright—the quickened circulation and blushing of the lover or of wounded modesty, the flow of tears and gestures of grief, joy, etc., changes in expression and movement, in a dreaming sleeper, consciousness of the presence of a limb, as evidenced by sensations referred to a limb after amputation, claiming that such sensations are not imaginary, but the outward projection of a previously stored impression; also claiming that all reflex action is evidence of material impression as the cause of mental action.

In support of the second proposition, he presented the records, clinical and post-mortem, of several cases, and cited the advances in cerebral localization and microscopic pathology. He incidentally recommended the adoption of vivisectional experimentation as the means of executing the death penalty upon criminals. In support of the third proposition, he referred to what had been advanced under the other headings, calling attention to the gradual and simultaneous decline of the cerebral and mental powers in diseases of the brain and cord.

The *Report on Materia Medica and Therapeutics* was presented by DR. WILLIAM E. COOPER, of Woodville, Va. From the phenol group comes *Phenacetine-Bayer*, a tasteless powder, freely soluble in alcohol, less so in glycerin, and still less so in water. It is a non-toxic, reliable, antipyretic and antineuralgic. The usual dose of 7.5 grains lowers the temperature from 1.8° to 3.6° F. for hours. It is best given in powders or soluble

pills. *Sulfonal-Bayer* promptly causes natural sleep in from half an hour to two hours of several hours' duration, in doses of 15 to 45 grains. It does not act unfavorably upon the heart, respiration, temperature or digestion. It creates no desire to increase the dose. It is given in a wafer, or it may be dissolved in soup or tea. *Amylene hydrate*, an isomer of amylic alcohol, is physiologically ranked between chloral and paraldehyde. It is a colorless, slightly oily liquid, boils at 102.5° C.; sp. gr. 0.81. It is freely soluble in alcohol, but requires eight parts of water. It is given with extract of licorice, or in red wine and sugar. In doses of from 50 to 75 grains it causes neither nausea, headache, indigestion, nor other unpleasant after effect; but more frequently than other hypnotics, it induces refreshing sleep. *Methylal* is a new hypnotic, is soluble in water, rapidly eliminated, and leaves no ill effects. Dose 3 to 5 grams. *Salufer* (neutral sodium silicofluoride), requires 1 ounce of water to dissolve 2½ grains, it is a powerful unirritating surgical antiseptic. For ordinary uses a grain is dissolved in an ounce of water to syringe out cavities, etc. It corrodes steel, but does not affect sponges. *Guaiacol*, an ether, derived from beechwood creosote, is a colorless liquid, of aromatic odor, slightly soluble in water, but readily so in alcohol and fixed oils. It is used by inhalations or in doses of a half to one minim, several times daily in consumption. The solution should be kept in colored bottles.

THIRD DAY—THURSDAY, SEPTEMBER 5.

DR. R. S. MARTIN, reporter on Section of Obstetrics and Diseases of Women and Children, read a paper on

ADVANCES OF DISEASES OF WOMEN.

Massage (Brandt's method) is reported to be practised with great success by Dr. Boldt, of New York, in the following conditions: Chronic and subacute para- and peri-metritis; all non-acute inflammatory uterine diseases; chronic and subacute oöphoritis; catarrhal salpingitis; all uterine displacements, with or without adhesions, unless dilated tubes are present; rectocele and cystocele; uterine hæmorrhages, not dependent on neoplasms; incontinence of urine dependent on relaxation of the visceral sphincter; hæmatocele; floating kidney, and prolapsus recti. It is contra-indicated, according to some, in all acute inflammatory processes; dilated tubes, and in all conditions where suppuration is suspected. This treatment is not useful in patients with very fat abdominal walls. The sèances vary from three minutes to a quarter of an hour.

Dr. Martin exhibited a *Outerbridge dilator*—an ingenious instrument, which acts also as a drainage tube. In sterility dependent on stenosis this introduced five or six days before menstruation

into the contracted cervix uteri and allowed to remain. It is also of value in sterility, due to flexions. For full description see *Medical Record*, April 20, 1889. *Electricity* holds a high place in the treatment of carefully selected cases. Engelmann uses galvanism for inflammatory products which admit of restitution, indurations, deposits due to interstitial inflammation, certain neoplasms. Davis, of Birmingham, Ala., uses faradisms for subinvolved uteri. It is useful in many cases of retroversion, many so-called pelvic inflammations, in amenorrhœa due to atrophy of the uterus, and in menorrhœa due to relaxation of the muscles. Many think electricity, after Apostoli's method, important for uterine fibroids; but the dangers of sepsis must be guarded against. Some think electrolysis of fibroids uncertain.

For *carcinoma uteri* Brown uses the curette freely and applies, on a tampon, a saturated solution of zinc chloride. Mundé uses a weak solution of sesquichloride of iron. Schramm injects half to one grain in an ounce solution of corrosive sublimate into the diseased mass two or three times a week, causing cessation of fetor and purulent discharges, and lessening the frequency of hæmorrhages. The feeble absorptive power of the degenerated tissue offers immunity from mercurial poisoning. The following is an antiseptic and sedative suppository extensively used in Paris:

R.	Iodoformi	gr. xv.
	Camphoræ	gr. jv.
	Ext. belladonnæ	gr. j.
	Ol. theobromæ	q. s.
℞	Make one suppository.	
S.	Put high up in vagina at night.	

High amputation of the cervix is advisable if the disease has not passed beyond the internal os. If disease has not extended beyond the uterus, hysterectomy is advised. As to *uterine fibroids*, Coe scrapes away the hypertrophied muscosa. *Vaginal hysterectomy* has been done successfully. During 1888, abdominal hysterectomy was done 43 times with only 9 deaths. *Uterine anteversions and flexions* are but rarely congenital, but results of previous para-metritis. Use antisepticized laminaria tents to soften the tissue, and render intra-uterine treatment more thorough. Use preliminary course of hot douches and glycerine tampons, then straighten the uterus bimanually, and hold in place by a pessary or intra-uterine stem. Dilatation with bougies and the persistent use of hot water, will usually effect a cure. Goodell advocates thorough dilatation with steel branched dilators, when dysmenorrhœa is a prominent symptom. Wylie condemns pessaries, but dilates rapidly under thorough antiseptis. *Alexander's operation* for shortening the round ligament has grown in favor. Mundé reports 23 cases with excellent results. Kellogg reports 65 successes out of 69 operations.

Schucking has devised and practiced successfully *vaginal suture of the uterus* in 18 cases for radical cure of retroflexed or prolapsed uterus. Hysterorrhaphy finds favor in Germany, where prejudice exists against Alexander's operation. A case of *lacerated cervix* operated on by the reporter in May, 1886, was delivered of twins, each weighing eight pounds, in July, 1889, without further laceration. Herrick pares the lips and holds them in apposition, not by sutures, but by an elastic band shaped like the cervix, large enough to cover the whole os and cervix, with a small hole in the band to allow the secretions to pass. Dr. T. Gaillard Thomas does not claim that operations for diseases of women are especially liable to *insanity*, but mentions six very significant cases, in none of which were the kidneys at fault, nor could the sequel be charged to iodoform poisoning.

REPORT ON ADVANCES IN OBSTETRICS.

The reporter, DR. CHAS. W. PRITCHETT, of Keeling, Va., first spoke of *Vomiting of Pregnancy*. Hewitt analyzes fifty selected cases, and contends that these cases confirm his opinions; that the vomiting of pregnancy is in most all cases associated with and dependent on uterine displacement, and thickening or induration of the cervix. Gill Wylie attributes it largely to induration of the cervix. Jaggard ascribes it to endometritis gravidarum. *Treatment*.—Gunther, of Montreaux, advises galvanism. Green reports cases cured by chloride of sodium. Collins and William Duncan report cases cured by the application of 10 per cent. solution of cocaine to the vagina and cervix. Rose recommends rectal injection of carbonic acid. *Anæsthetics*.—Recent writers accord antipyrin a very high place in the first stage of labor—relieving pain and fatigue while the uterine contractions are not interfered with. Chloroform holds its own in the second stage of labor. Budin advises chloroform only to dull pain and not to complete anæsthesia, unless to perform an operation more severe than the application of the forceps. Swieicki, of Posen, has used a mixture of nitrous oxide and oxygen in the proportion of 4 to 1. Winckel regards the mixture as harmless and especially useful in cases of elderly primipare. Hypnotism is a failure as an obstetric anæsthetic. *Antiseptics*.—The comparative results in hospitals in which antiseptics are used and of those in which they are not, are sufficient to show their great value in reducing the mortality of the lying-in chamber. Corrosive sublimate in weak solutions and in skilful hands is still the queen of antiseptics and germicides. *Eclampsia*.—There is yet considerable discord as to the cause and treatment of puerperal convulsions. Santos believes that the albuminuria is the result of reflex irritation of the sympathetic and renal nerves by the enlargement and, later

on, the contraction and retraction of the uterus. Lusk says albuminuria is caused by renal insufficiency, and is not the cause of the convulsions. Paget denies the dependence of eclampsia on albuminuria, but attributes it to a reflex cause. *Mastitis*.—According to Richardson this is the result of septic infection, and he urges that the child's mouth be kept perfectly clean and the nipple well washed with antiseptics. Monti advises that the fissures of the nipple be painted with a solution of gutta-percha in chloroform. *Puerperal septicæmia*.—It is disputed whether this disease is dependent on one or more organisms. Vidal claims that there are at least two, and that there is no characteristic difference between the germs of puerperal septicæmia and erysipelas. Gussow denies their identity and insists that erysipelas cannot cause puerperal septicæmia. Doyon says they are one and the same. Others assert that puerperal septicæmia is of an erysipelatous nature and the fever typical of erysipelas.

REPORT ON ADVANCES IN DISEASES OF CHILDREN.

The reporter, DR. A. S. PRIDDY, of Keysville, Va., has not found any material advance except in diseases of the alimentary canal. The researches of Holt, Escherich and others with reference to *intestinal bacteria* were summarized with the deduction that three facts must be kept in mind in studying the effects of microorganisms upon the human system: the nature of the organisms, the dose and numbers in which they enter, and the susceptibility of the patient. The two varieties of bacteria which have been isolated and studied in the intestines of young children are the bacterium lactis aerogenes (found in the upper portion of the small intestine), and the bacterium coli commune. The first decomposes milk sugar, with the development of lactic or acetic acid, to which the acidity of the intestine is due. After a full review of the subjects involved, the lessons are drawn that the infant must not be overfed, and that the milk (in bottle-fed cases) should be sterilized, and the vessels themselves that hold the milk should also be sterilized. *Milk was first sterilized for food* in Munich, 1886. Dr. Caillé, of New York, introduced sterilized milk as an artificial food into this country in 1888, and the results have been favorably received. It remains sweet for six weeks, while boiled milk can be kept only four or five days even on ice. *Stomach washing* for gastro-intestinal disease, first used in Prague in 1880, satisfactorily introduced by Seibert in New York in 1888, is especially serviceable in dyspeptic disorders attended with regurgitation of food, in cholera infantum, etc. Pass a long, soft, velvet-eyed rubber catheter attached to a fountain syringe, through the pharynx into the stomach; pour in a cupful of warm water, while the child is in the upright position. Then tilt the child forwards, and the water returns

through the catheter. For *intestinal irrigation*, pass a Nélaton soft rubber catheter (with a hole in the end instead of at the side) some 8 or 10 inches into the bowel. Through this catheter, attached to a fountain syringe, pass a quart or two of warm water containing 1 drachm of sodium salicylate to the pint of water. Though the treatment is not new, it is only during the past two years that it has become popular in this country—chiefly through the reports of Dr. Booker, of Dr. H. P. Wilson's Sanitarium, of Baltimore. It is useful in dysentery, gastro-enteric catarrh, acute and follicular enteritis, etc. Dr. Priddy has used the treatment successfully in a number of cases of gastro-enteric catarrh, dysentery, etc., relieving the nausea, vomiting, tenesmus, etc., and curing his patients.

Honorary Fellow, DR. GEORGE TUCKER HARRISON, of New York, read

A FURTHER CONTRIBUTION TO THE STUDY OF
THE ETIOLOGY AND PROPHYLAXIS OF
PUERPERAL SEPTIC INFECTION.

The doctrine of auto-infection, which has recently been brought into great prominence, and the industrious researches of the bacteriologists, with the practical deductions from them, have divided obstetricians into two parties diametrically opposed to each other. The one side attaches all importance to the disinfection of the obstetrician (Mermann's subjective infection); the other regards it as a matter of necessity to subject the parturient woman, in a greater or less degree, to antiseptic measures (objective antiseptis). The writer took the ground of those who advocate the paramount importance of subjective antiseptis, in the paper read before this society in 1885, and has had no reason to change his ground. Of course this position does not exclude the thorough cleansing and disinfection of the external genitals. The views of Kaltenbach were quoted, who insists upon it that an obstetrician, even with clean hands, can induce infectious forms of disease. He believes that, as the surgeon disinfects his field of operation, so must the obstetrician disinfect the parturient canal, as well as the vicinity. Winter (*Zeitschrift f. Gyn.*, etc.), as the result of bacterial investigation, draws the inference that it is necessary to disinfect the cervix and vagina to avoid auto-infection. Steffek and Dolderlein arrive at the same conclusion. The writer believes that if the demands made by the bacteriologists should be generally acceded to, and it should become a universally accepted rule of practice that the cervix and vagina of every parturient woman should be subjected to thorough and energetic disinfection, an immense amount of injury would be inflicted. These disinfective procedures deprive the vagina of its physiological mucus, and render it more vulnerable. It becomes more liable to the attack of in-

fective germs. Moreover, labor is mechanically retarded when the vagina lacks its normal mucus, nor must it be left out of mind that disinfection of the vagina and cervix is a painful manipulation. Probably the most serious objection which can be urged against the auto-infection doctrine is that it diminishes the personal responsibility of the obstetrician, and that wholesome dread of infection disappears, which every one should have who examines a parturient woman. The distinction was made between septic infection and putrid intoxication. Cases of so-called auto-infection are really cases of ptomaine intoxication. The microorganisms of septic infection are streptococci. According to Bumm, the streptococci of erysipelas and phlegmonous inflammations are identical. Bumm's careful and exact bacteriological studies lend no countenance to the doctrine of auto-infection. Leopold's clinical experience is very striking. Of 150 women treated without vaginal douches, only nine had slight febrile phenomena. When the cervix and vagina were disinfected, there was a marked rise of morbidity. The doctrine of auto-infection is a retrograde movement, and tends to imperil our present attainments in the prophylaxis of septic infection.

(To be concluded.)

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Tetanus as an Infectious Disease—The Scottish System of Admitting Voluntary Patients into Lunatic Asylums—The Microscopic Examination of Urinary Deposits—The Antiseptic Power of Hydro-naphthol—Miscellaneous Notes.

Tetanus as an infectious disease is now attracting a great deal of attention. At a recent medical meeting a member dwelt upon the virulence of the soil when contaminated by the dejections of tetanic horses. He insisted upon the frequency of tetanus in wounds of the lower extremities. Thus, in Havana, it was stated, out of 162 patients suffering from tetanus 132 had contracted it from wounds of the legs and feet. The disease is frequent in persons who after being wounded get in contact with the soil, as in the cases of comminuted fracture, in which the bones are forced into the ground, and crushing of the bare feet, also when the injury is inflicted with an agricultural instrument. Experiments made with pure soil and with a soil known to be impregnated strongly support this view. Certain soils seem to preserve their virulence much longer than others, and stagnant water has been found to favor the proliferation of the microbe.

The Scottish system of admitting voluntary patients into lunatic asylums appears to work very satisfactorily. Last year the number of such patients was fifty-five. They are described as persons whose mental condition is not such as to render it legal to grant certificates in their case, yet they are necessarily sufferers who are sufficiently conscious of their own condition to feel the need of restraint. Unlike our habitual drunkards who place themselves in "Retreats," they cannot be detained for more than three days after giving notice to leave if they persist in that desire, and it appears that they are not registered as lunatics. At the visits of the Medical Commissioners to asylums all voluntary inmates are seen, and they have then an opportunity of making statements in regard to their position. Where there is reason to suppose that they fail to understand the conditions of their residence, it becomes the duty of the official visitors to explain. The Scottish Commissioners in Lunacy state that for some years past nothing has occurred to shake their faith in the advantages of the system or of the law under which it is regulated.

A good suggestion has been made with regard to the microscopic examination of urinary deposits. In order to examine these deposits, it is necessary to allow the liquid to remain quiet for some time. In hot weather the urine is liable to undergo decomposition during this time, and to avoid this it is proposed to add a solution of boric acid and borax. This solution is obtained by adding to a 12 per cent. solution of borax another 12 per cent. of boric acid and filtering while the liquid is warm. To the urine to be preserved about one-fifth to one-third of its volume of the boracic solution is added, which enables the deposit to be collected before any decomposition sets in.

Mr. A. H. Mason has recently been making experiments upon the antiseptic power of hydronaphthol and finds it to be about fourteen times as strong as carbolic acid, and in fact, out of thirteen substances of this class only one, corrosive sublimate, was found to surpass it. He found that as an antiseptic hydronaphthol, when dissolved in ordinary water, was not more than half as powerful as corrosive sublimate when dissolved in distilled water, but under such circumstances as the surgeon meets with it is said to be more effective than sublimate. As a germicide he considers it to be at least as powerful as corrosive sublimate for anthrax and more so for bacillus subtilis, even when the latter was being used under conditions most advantageous to it.

An interesting communication has been made to *The Lancet* by Dr. A. H. Hassall, the salient point of which consists in the suggestion that all phthisical patients should be provided with spittoons containing perchloride of mercury solution for the reception of the sputa, whilst the use of

cloths or handkerchiefs for this purpose should be discouraged.

Dr. Drysdale has had under his observation a case where a man who had previously been in robust health, and of a healthy family, married a woman in 1886 who had suffered from hæmoptysis three years before her marriage, and who died of phthisis pulmonalis. The husband had the first symptoms of the disease in 1887, a year after marriage, and is at present suffering from chronic phthisis. Dr. Drysdale contributes this case to the discussion now going on as to the part played by contagion in the spread of tuberculosis. Many statistical facts point in the direction of such contagion. Thus the disease is absent in Alpine districts, thinly inhabited by a healthy population, and it is most prevalent where people are most crowded in large houses with flats, as in Paris and Vienna.

At the General Infirmary, Leeds, the practice is commonly adopted of washing out the peritoneum after abdominal section, in which blood or other fluids have been effused. The fluid, whether simple warm water or boracic lotion, is usually poured into the wound from a jug, being introduced into the cavity by means of a glass funnel attached to a glass drainage tube by about 2 feet of rubber tubing. The drainage tube is introduced deep in the pelvis, by which means the water enters exactly where it is wanted and washes upwards and out of the abdominal wound all blood clots or effused fluids. The drainage tube is left *in situ* after by pressure removing as much of the fluid as possible.

Some recent statistics of sleep, though they may not prove anything of importance, are interesting. Students sleep longer and are less tired than other men. The time needed to fall asleep is about the same in all three classes—20.8 minutes for the men, 17.1 minutes for students, and 21.2 minutes for women. In each case, however, it takes longer for those who are frequent dreamers and light sleepers to fall asleep than persons of opposite characteristics.

Sir Morell Mackenzie has been presented with the freedom of the city of San Remo, richly illuminated and enclosed in an elegant casket, in recognition of his patronage of that city. This act of appreciation, suggested by Mr. Squire, of San Remo, was warmly responded to by the Mayor and the inhabitants.

Within the last few weeks thirteen patients from various parts of the country have been sent to Paris at the expense of the Lord Mayor's Fund for treatment at the Pasteur Institute. All are suffering from bites of dogs supposed to be rabid.

G. O. M.

IN JAPAN there are thirty-one schools of medicine.

DOMESTIC CORRESPONDENCE.

A Nosological Problem.

To the Editor:—Will you kindly publish the history of the following case, allowing me to ask through the columns of *THE JOURNAL* a solution of what seems to me an incomprehensible nosological problem.

Ethel J., aged 8, the daughter of healthy parents, has never had any lingering or serious illness; digestion fairly good, bowels very inactive, appetite good, though capricious, sleeps well, subject to quite frequent attacks of headache. On the evening of August 20, shortly after supper, was seized with an attack of nausea and vomiting. The ejected matter consisted of partially digested food and a membranous substance of an irregular shape, six inches in length by five inches in width. On one side here and there were little lumps of fatty matter the size of a small pea.

I have never in practice or in literature met with anything like it, and would be pleased to learn if any of the readers of *THE JOURNAL* have.

C. M. FERRO, M.D.

Tracy, Minn.

The New Official Register of Physicians.

To the Editor:—Will you have the kindness to notice in your columns for the benefit of your numerous subscribers in Illinois, that this State Board of Health has in preparation a new Official Register of Physicians and Midwives, and suggest that those who have changed their place of residence or removed to other towns since February, 1886, should notify the Secretary at Springfield of such change of address without delay.

JOHN H. RAUCH,

Secretary Illinois State Board of Health.

Springfield, Ill., Sept. 30, 1889.

Sanitary Condition of Los Angeles.

To the Editor:—In response to your editorial entitled "The Sanitary Condition of Los Angeles" (Sept. 28), pardon me for a statement of the facts. "The paragraph by a local paper" is simply claptrap, which grew out of a heated newspaper contest prior to the sewer bond election, as the figures will demonstrate.

Los Angeles, with a population of 80,000 inhabitants in 1888, had a death-rate of 8.50 per 1,000. The death-rate for the current year is 8.89 per 1,000 inhabitants per annum. These figures include '95 deaths from consumption from foreign states" for last year, with even a larger proportion for the present year. These figures also include the deaths of the Los Angeles County Hospital (located in the city), which is no less than an interstate and international

Hospital as well. I voted for the bonds, but knowing the figures and the facts, I am constrained to say that the "gem of the Pacific coast" has, indeed, a clean sanitary "escutcheon."

Very respectfully,

J. H. DAVISSON, M.D.,

Member City Board of Health.

Bryson-Bonebrake Block, Los Angeles, Cal.

BOOK REVIEWS.

TRANSACTIONS OF THE GYNÆCOLOGICAL SOCIETY OF BOSTON. NEW SERIES. Vol. I. Boston: Cupples and Hurd, 1889.

This is a handsome volume of nearly 400 pages, containing 29 excellent papers. A prefatory note states that the society, which was founded in 1869, has published seven volumes of its transactions covering the period between 1869 and 1872. The present volume contains papers read since 1879.

ANNUAL REPORT OF THE SUPERVISING SURGEON-GENERAL OF THE MARINE-HOSPITAL SERVICE OF THE UNITED STATES FOR THE FISCAL YEAR 1888; pp. 406.

A great deal of interest to the medical reader will be found in this report, which includes, among other matters, a description of the outbreak and management of the recent epidemic of yellow fever in Florida; observations on the natural history of epidemics of yellow fever by Passed Assistant Surgeon John Guitéras, M. H. S.; a report on the food of seamen coming into the port of Philadelphia, by Surgeon P. H. Bailhache, M. H. S.; a report relative to food issued to seamen on merchant vessels arriving at San Francisco, together with a report of scurvy treated during the seventeen years ending June, 1888, by Surgeon H. W. Sawtelle, M. H. S.; selected reports of special operations by various surgeons of the service; reports of a large number of fatal cases, with necropsies. Much credit is due the Surgeon-General, Dr. J. B. Hamilton, for the excellent manner in which his report is presented.

LECTURE ON BRIGHT'S DISEASE. BY ROBERT SAUNDBY, M.D., Edin.; F.R.S.P., Lon.; Emer. Sen. Pres. Royal Med. Soc.; Physician to the Birmingham (Eng.) Gen. Hosp., etc., etc., etc. With fifty illustrations. New York: E. B. Treat, 771 Broadway; 1889; pp. vi, 290.

In this attractive volume the writer has set forth, in a lucid and readable form, the results of thirteen years' clinical and pathological study of Bright's Disease. The reader cannot fail to be pleased, entertained and instructed by its perusal, for it is one of those books that are "easy to read," while replete with information. It is

¹ Annual Report of Health Officer J. W. Reese, M.D., 1888.

thoroughly practical and admirably suited to the needs of the practitioner. The various chemical and microscopical tests for the detection of the disease are well described, and the classical descriptions of the various clinical features of disease are admirably illustrated by short selected reports of the author's cases. The work is divided into three sections, with subdivisions of chapters as follows:

Section 1.—General Pathology:

Chapter I. Albuminuria.

“ II. Pathology of Dropsy.

“ III. Pathological Relations of Tube Casts.

“ IV. Cardio-Vascular Changes.

“ V. Pathology of Polyuria.

“ VI. Pathology of Uræmia.

“ VII. Retinal Changes.

Section 2.—Clinical Examination of the Urine:

Chapter IX. History-Classification-Etiology.

“ X. General Anatomy of the Kidney.

“ XI. Febrile Nephritis.

“ XII. Lithæmic Nephritis.

“ XIII. Obstructive Nephritis.

“ XIV. Complications.

“ XV. Treatment of Lithæmic Nephritis.

Books of this description do not gather very much dust on the shelves of the general practitioner.

MISCELLANY.

HEALTH IN MICHIGAN.—For the month of September, 1889, compared with the preceding month, the reports indicate that typho-malarial fever, whooping-cough, typhoid fever (enteric) and diphtheria increased, and that cholera morbus, erysipelas and inflammation of bowels decreased in prevalence.

Compared with the preceding month, the temperature in the month of September, 1889, was lower, the absolute and relative humidity were about the same, the day ozone was less, and the night ozone was slightly more.

Compared with the average for the month of September in the three years, 1886-88, cholera infantum, inflammation of kidney, whooping-cough and cerebro-spinal meningitis were more prevalent, and influenza, diphtheria, puerperal fever and scarlet fever were less prevalent in September, 1889.

For the month of September 1889, compared with the average of corresponding month in the three years 1886-'88, the temperature was slightly lower, the absolute and relative humidity were about the same, the day ozone was less, and the night ozone was more.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of September, 1889, at 34 places, scarlet fever at 20 places, typhoid fever at 47 places, and measles at 7 places.

Reports from all sources show diphtheria reported in 13 places more, scarlet fever at 2 places more, typhoid fever at 7 places more, in the month of September, 1889, than in the preceding month.

The bulletin "Health in Michigan," heretofore issued by the Secretary of the State Board of Health have mentioned the increase and decrease of those diseases in

which a difference of seven or more was shown between the per cents of reports, stating the presence of the disease in the current week or month and in the preceding week or month, or in the corresponding month in previous years.

Hereafter those diseases will be mentioned of which the comparison shows an increase or decrease of 25 per cent from the preceding week or month, or from the normal as the case may be.

The new method has the effect of calling attention to changes in the prevalence of diseases, which like diphtheria and scarlet fever are important, yet which are not usually reported by a very large number of observers, and, therefore, under the old plan would not be mentioned.

LETTERS RECEIVED.

Dr. George Purviance, Philadelphia; Dr. A. G. Root, Albany, N. Y.; Dr. Didama, Syracuse, N. Y.; Dr. W. K. Sutherland, Mansfield, O.; Dr. S. F. Illick, Detroit, Mich.; Dr. S. T. Armstrong, New York; J. Astier, Paris, France; Dr. Greenley, West Point, Ky.; J. H. Chambers & Co., St. Louis, Mo.; Dr. J. W. Carhart, Lampasas, Tex.; Cadogan N. Hatcher, Quincy, Ill.; *Detroit Free Press*, Detroit, Mich.; Dr. J. Lucius Gray, Chicago; Dr. E. R. Fletcher, St. Paul, Minn.; Dr. A. E. Prince, Jacksonville, Ill.; Longmans, Green & Co., New York; Dr. Perry H. Millard, St. Paul, Minn.; C. W. Bennett, Quincy, Mich.; Dr. E. S. King, York Institute, N. C.; Dr. Maris Gibson, Wilkesbarre, Pa.; R. G. Dun & Co., Chicago; Dr. Chas. F. Disen, Minneapolis, Minn.; Rio Chemical Co., St. Louis, Mo.; Medical and Surgical Sanitarium, Battle Creek, Mich.; Fairchild Bros. & Foster, New York; Dr. C. B. Powell, Albion, Ia.; The Marlin Fire Arms Co., New Haven, Conn.; Sharpe & Smith, Chicago; Dr. W. C. Eustis, Farmington, Minn.; Wm. P. Cleary, New York; Dr. F. D. Green, Richmond, Ind.; Dr. A. Vander Veer, Albany, N. Y.; Street & Co., London, Eng.; Sharpe & Dohme, Baltimore, Md.; Dr. Henry O. Marey, Boston; Dr. A. B. Judson, New York; Thomas Gardiner, Coronado, Cal.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from September 28, 1889, to October 1, 1889.

Major Benjamin F. Pope, Surgeon, leave of absence granted in S. O. 54, Dept. Texas, August 17, 1889, is extended one month, by direction of the Secretary of War. Par. 6, S. O. 224, September 26, 1889.

Capt. and Asst. Surgeon George W. Adair, granted leave of absence for one month. S. O. 90, Hdqrs. Dept. of the Platte, September 25, 1889.

Capt. Alonzo R. Chapin, Asst. Surgeon, is granted leave of absence for fourteen days, with the approval of the Secretary of War. Par. 10, S. O. 223, A. G. O., September 25, 1889.

Asst. Surgeon Jefferson D. Poindexter, U. S. Army, granted leave of absence for one month. S. O. 113, Hdqrs. Dept. of Dak., September 30, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending October 5, 1889.

Surgeon Geo. E. H. Harmon, detached from the U. S. S. "Constellation" and ordered to Naval Academy.

Asst. Surgeon C. H. T. Lownes, detached from the U. S. S. "Constellation" and to Naval Academy.

Surgeon George F. Winslow, ordered to Marine Rendezvous, Boston.

Asst. Surgeon Chas. P. Henry, ordered before the Retiring Board for examination.

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ORIGINAL ARTICLES.

CONCEALED PREGNANCY—ITS RELATIONS TO ABDOMINAL SURGERY.

Read in the Section of Obstetrics and Diseases of Women, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY ALBERT VANDERVEER, M.D.,

PROFESSOR OF DIDACTIC, ABDOMINAL AND CLINICAL SURGERY IN THE ALBANY MEDICAL COLLEGE.

A half century ago a distinguished German surgeon was called in consultation by a very competent obstetrician to a case in which the patient had apparently been in labor for three weeks. A Cæsarean section was decided upon, and the abdomen opened, when, to the discomfiture of all, nothing but intestines distended with gas were found. That the Professor was chagrined and in a vindictive frame of mind, was demonstrated by the after-treatment, for he kept the abdomen packed in ice, applied two hundred leeches to the abdominal walls, and in addition subjected the woman to three bleedings. The patient recovered, and doubtless ever after desisted from trifling with the resources of surgery. This case has never been reported as a successful Cæsarean section. From then until now errors relative to the diagnosis of pregnancy, as a complication of abdominal section, have occurred, and doubtless will continue to occur; no one has been free from the liability to this error. The most eminent and painstaking surgeon of extensive observation, as well as the operator of few opportunities, have alike the same experience.

When mine came I must confess to you that I felt not a little humiliated. I asked myself after a careful review of my notes, and those of my assistant, "Have I exercised all the care that is possible in the examination of my case, and has my diagnosis been based upon good judgment?" Text-books on obstetrics and gynecology furnished but little aid or comfort. The few cases reported were widely scattered, and many found in the tables accompanying this paper were se-

cured only after diligent, personal inquiry. Many of the mooted questions of abdominal surgery have already been settled, and we are little benefited by papers devoted to the treatment of the pedicle, drainage, or the detailed histories of cases. I have thought that I might be able to contribute something for the benefit of the profession, by giving the results of my investigation of this subject. I shall relate to you the histories of two personal cases of exploratory incision in which pregnancy as a complication of fibroid tumor occurred, and which was not diagnosticated prior to the operation, either by myself or my colleagues, after repeated careful examinations. I purpose treating the subject with perfect frankness. I have collected all reported cases, wherein the same conditions existed, and personal inquiry has secured the histories of many others which are now presented for the first time. That the table is incomplete I know, for some of the operators have either perverted the histories of their cases, or have suppressed them altogether. This latter statement is capable of abundant proof. We shall later, when we come to the consideration of the table of cases, collect such facts as seem warranted from the clinical histories, and endeavor to draw from them such conclusions as are justifiable.

Case 1.—Abdominal Section, Exploratory. Operator A. VanderVeer, M.D. Operation October 7, 1887.

Mrs. E. C. W., æt. 34, native of United States, married and by occupation a housewife. Family history decidedly tubercular. Patient gave history of past ill-health, but aside from an expression indicative of much pain and suffering, she seemed physically strong. First menstruation at 13, scanty and painful; menstruation always irregular; has suffered for extended periods from amenorrhœa. No children, no miscarriages. Was treated during 1883 for ulceration of the cervix with leucorrhœa. June 5, 1887, was the date of the return or her menstruation, but no flow appeared, and on June 25, 1887, she noticed a tumor in the left iliac region which grew rapidly and became very painful. Patient had a slight show July 4, also noticed a slight tingling and swelling in the breasts; no nausea or vomiting. September 30 I gave her a careful examination at my

NOTE.—For much that pertains to the preparation of this paper, collection of cases, etc., I am indebted to Dr. Willis Goss Macdonald, Assistant in Abdominal Surgery, Albany Medical College; and I wish also to extend my thanks to those gentlemen who were so kind as to send me the history of their own cases hitherto unpublished, and other references.

office and made the following notes: Breasts slightly enlarged and tender, areola not markedly pigmented; abdomen, to the height of the umbilicus, irregularly distended. Palpation revealed a hard tumor on the left side, and a softer one (semi-fluctuant), on the right side. No absolute signs of pregnancy after repeated examinations. Per vaginam, a natural cervix could be felt high up and a mass at the left of the uterus was distinctly made out. I was in much doubt as to her condition, taking into full consideration the probability of a normal or extra-uterine gestation, also of fibroid or fibro cystic tumor of the uterus. I advised that she enter the Albany Hospital for further observation, which she did a few days later. Upon examination and consultation with Drs. Boyd and Townsend, having agreed upon the physical signs already detailed, and having introduced the sound into the uterus three inches without result, in view of the distress and great pain of the patient an exploration was deemed advisable. A full explanation was made to the family, an operation advised and consented to by them, having in view the great probability of an ectopic gestation. Abdominal incision revealed two fibroids upon the left of the uterus, subperitoneal in character, and the remainder of the uterine tissue, especially upon the right side, seemed involved by multiple myxomata of a softer consistency. Adhesions were very general, precluding its removal. No further operation being advisable, abdomen was closed. Patient went on well until fifth day, when localized peritonitis developed and rapidly became general. On evening of sixth day abdominal wound opened in consequence of great distension of the bowels, due in part to peritonitis and obstructive pressure of fibroids. A large dressing was saturated with serous effusion. Wound was brought together by strapping. Next morning drainage was introduced, peritonitis subsided in a day or two, and the case went on to recovery. Discharged from hospital November 8, 1887, abdominal wound completely healed. November 13 I visited her at a friend's home and found her presenting a very good condition of health, and able to move about the house. Advised the use of electricity, and requested her to let me know later on how she progressed.

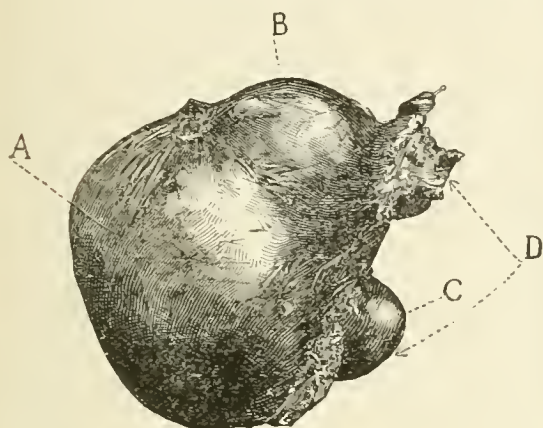
December 24, Dr. H. F. C. Miller, of Rensselaerville, N. Y., who had originally referred the patient to me, visited me and stated that he had been called to attend Mrs. W. a few days previous. Arriving at her house he found her partially delivered of a six months' fetus. The doctor delivered the placenta, noticing quite an enlargement of the abdomen remaining. Patient recovered from her abortion slowly, and since I have had no opportunity for an examination.

Case 2.—Abdominal Section, Exploratory. Operator A. VanderVeer, M.D. Operation May 11, 1888.

Mrs. M. M. S., æt. 35, native of United States, and by occupation a housewife. Family history excellent, and before puberty enjoyed good health. First menstruation at 14, always regular, but suffered from dysmenorrhœa and menorrhagia. The menstrual blood was always clotted. Married seven years, no children, no abortions. Three years previous had an attack of general peritonitis, from which she made a good recovery. Four years ago began to have a dull, dragging pain in the right iliac region, and extending down the thigh. A very competent gynecologist was consulted, who regarded the trouble due to the pressure of a displaced uterus.

For the last eight weeks she had menstruated but one day, at the time for her menstruation. About the middle of March, 1888, patient noticed a small hard tumor in left iliac region which gave rise to little discomfort. The tumor grew very rapidly after discovery and was very painful, requiring the free use of anodynes to keep the patient comfortable. The breasts were tender, but the areola not markedly pigmented. The tenderness of breasts always occurred with menstruation. I saw her at her house in consultation with Dr. J. R. Davidson, her family physician, May 6, 1888. Upon palpation I found a growth in the left iliac, hypogastric, and extending upward in the umbilical regions and rather beyond the median line. It was very tender, nodular and boggy to the touch. Upon percussion was perfectly flat and did not fluctuate. Auscultation revealed no sign. Per vaginam the cervix could be made out far back towards the sacrum, but the body of the uterus could not be outlined. In the cul-de-sac of Douglas a body the size of an egg could be defined. Bimanually cervix and growth moved as a single body. The uterine sound passed 3½ inches. Ballotement failed to elicit anything. The vagina was not distinctly tinged. The patient was examined by Drs. Boyd, Townsend and myself a few days later. Although in consultation the intra-abdominal condition could not be agreed upon, from the urgency of the symptoms an exploration was deemed advisable, believing the growth to be a multiple, uterine fibroma, with a view to hysterectomy or the removal of the uterine appendages. The abdomen was opened by the usual median incision, and upon examination of the growth it seemed sarcomatous in its nature, springing from the broad ligament and the body of the uterus. From the extent of the pelvic adhesions, the great vascularity of the growth and the bad prognosis of sarcoma, its removal was not undertaken. The fourth day after the operation localized peritonitis occurred, but yielded kindly to salines and ice coil locally. In the morning of the tenth day a slight show was noticed, and at noon the patient aborted, the fetus being about four months. There was no flooding. Her condition rapidly became more

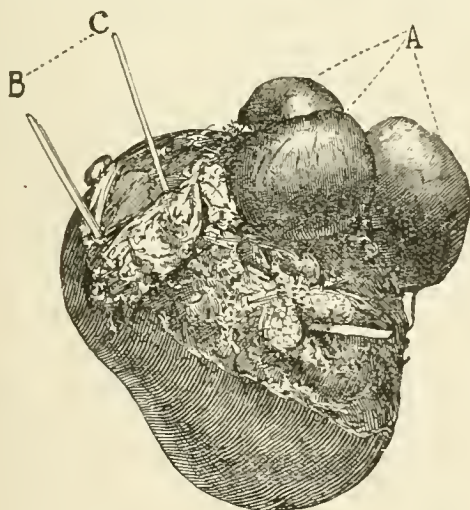
serious, and she died from exhaustion May 24, 1888. Autopsy three hours after death. Uterus implicated by large fibromyxoma, partially subserous in character, was studded with hard, nodular excrescences, thirteen in number, and which



N-1.

Left anterior view. A, B, and C, fibroid in order of size. D, broad ligament.

completely surrounded the uterus. The great mass of the uterine tumor lay to the left of the uterus. There were extensive adhesions of tumor to the intestines and bladder. Cavity of uterus 4 inches in depth, and contained small portions of

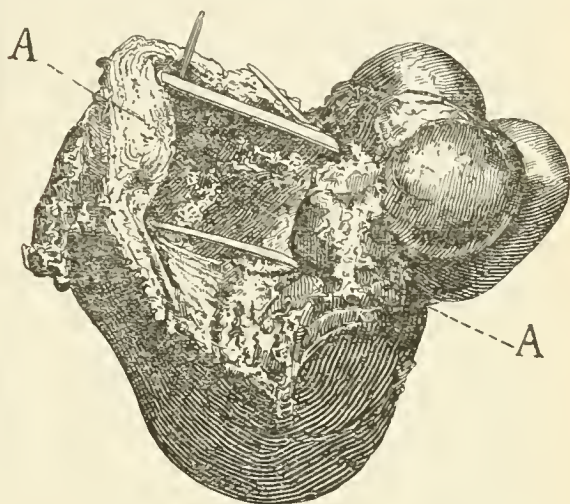


N-2.

Posterior view. A, smaller masses left in cul-de-sac of Douglas. B, right Fallopian tube. C, right ovary.

the placenta. There was no fluid in abdominal cavity, and but slight evidence of recent peritonitis. No further examination was made. For a clearer idea of the tumor I invite your attention to the photographs here presented.

In addition to my personal cases I shall take the liberty of presenting to you abstracts of the histories of cases which illustrate the conditions that are properly open for discussion.



N-3.

Same as No. 2, with cavity of uterus laid open, and showing a fibroid in posterior wall.

*Case 3.*¹—Abdominal Section, Exploratory. Operator Dr. Cornelius Kollock. Operation May 21, 1889. *Abstract.*—A. C. F., æt. 28, colored, married and has one child, now 10 years old. General health apparently good. Four years ago she first noticed a fullness of the abdomen, more to the right than the left side. When I first saw her, (May 10) she was very much distended. The prominence was central and very high up. Tumor movable, hard and nodular. Fluctuation could not be elicited. Menstruation normal in every particular. She positively affirmed that she never missed a period save when pregnant the first time. There was no vaginal tilting, the os uteri was closed, and the cervix as hard as cartilage. The sound was introduced nearly 4 inches into the uterus, and she did not present a single symptom of pregnancy. The tumor had become so large that it produced severe dragging, dyspnoea and discomfort. An exploratory incision disclosed a very large subperitoneal fibroid springing from the fundus by a broad pedicle. The uterus was occupied by twenty-two other fibroids varying in size from an orange to a cherry. A supravaginal hysterectomy was done, and the uterine cavity found to contain a macerated fœtus of two and one-half or three months. The patient was doing well June 1. A recovery.

Case 4.—Abdominal Section for Multiple Fibromyxoma. Operator M. Péan. Operation Decem-

¹ The abstract of this case is made up from notes kindly furnished by Dr. Kollock, who has frankly stated the facts in this and another case, and generously offered them for publication.

ber 15, 1874. *Abstract*.—Madame B., æt. 37, a widow for several years, always sterile. For several years had suffered from severe menorrhagia. Recently tumor had grown very rapidly and flooding had been very exhausting. M. Péan diagnosed fibromyxomata, and proceeded to their removal, which he did by enucleation. The operation was followed by abortion on the second day. Gestation had advanced between four and five months. Patient recovered.

Case 5.—Abdominal Section for Fibromyxoma. Operator Professor Freund, Strassburg, contributed by Dr. J. W. Poucher, Poughkeepsie, N. Y. *Abstract*.—Patient æt. 50, married many years, always sterile. Fibroid had existed for some time longer than discovered pregnancy. When the uterus was opened, to his own and everybody's surprise, Freund brought out a buxom fetus which also seemed very much surprised, for it immediately began to cry. It proved to be at least eight months old and all right. There was also a large fibroid which was very vascular. A supravaginal hysterectomy was done to complete the operation, and the result is unknown to me. This case is now reported for the first time.

Case 6.—Abdominal Section, Exploratory; operator, Robert Barnes, M.D.; operation January 7, 1877. *Abstract*.—Mrs. C. had been married for several years; no children or abortions. Always menstruated punctually until three months ago, without excess, since which time menstruation has been suspended and pelvic pain has arisen, with dysuria, retention and intra-pelvic pain, accompanied by vomiting. A fortnight ago swelling in the hypogastrium from pelvis upward became marked, and the abdomen was found partly filled by a tumor taken to be a fibroid. January 24, 1877, Dr. Barnes saw the case and found an enlargement of abdomen extending to a little above umbilicus on the right side and not quite so high on the left. It was tender and lumpy, and the os uteri was felt high above the upper edge of the symphysis pubis, small and compressed transversely. Sound passed two and one-half inches. Behind tract of sound, and apparently behind tract of uterus, another dense tumor could be felt. By rectum the mass could be felt rounded, filling sacral hollow. Two days later Drs. Baber, Braxton-Hicks and Barnes met in consultation and discussed the probabilities of the case. Under ether an attempt was made to dislodge the tumor from the pelvis, which was only partially successful. They thought the probability preponderated in favor of an ovarian tumor partially solid. It seemed impossible that fibroids could be developed so rapidly. The condition of pain, retention, vomiting and commencement of strangulation of impacted mass made it imperative to give quick relief. Gastrotomy was decided upon with this end in view. Abdominal section revealed general peri-

tonitis. On summit and side of tumor were numerous nodular projections. Trocar plunged in and a little blood and foul air was obtained. Tumor and uterus were removed by supra-vaginal amputation. Uterine cavity contained three months' fetus. Death from shock.

Case 7.—Abdominal Section for Fibro-Myxoma; operator, Dr. Alex. Patterson; operation, December 11, 1884. *Abstract*.—Mrs. M., aged 36, married nine years, menstruation always regular until last few months; now it was entirely suppressed. For years menstruation has been profuse. August, 1884, the patient accidentally discovered tumor in left side of abdomen about the size of a small plum. In September tumor began to increase rapidly and to be accompanied by great pain. September 22d a specially qualified consultant was called, and his diagnosis was hæmatocele in Douglas' pouch and his advice against operative procedures. Matters becoming more serious an eminent surgeon was called, who gave his opinion in very decided terms that the tumor was uterine fibroid and should be left alone, as an operative procedure would only hasten a fatal result. I was called December 21st and thought the case to be one of fibroid that could be removed and the patient recover. In the left iliac fossa, close to the pelvic brim, the tumor was most readily encountered. It was traceable across the lower abdomen, getting lower to the brim on the right side. The growth was firm, elastic, nodular, and painless on pressure. Per vaginam, pelvis filled by small mass, and the vagina was roofed across. Uterus completely fixed. Wishing to be sustained I called a medical friend well versed in such matters, and after a prolonged examination he decided the case to be one of ovarian disease, probably double, and that it should be removed. An endeavor was made to introduce the uterine sound, but it could only be made to pass one and one-half inches. Abdominal section revealed multiple fibro-myxoma. A supra-vaginal hysterectomy was done and uterine cavity found to contain a four months' fetus. Patient recovered without a bad symptom.

Case 8.—Abdominal Section, Multiple Fibroid; operator, Dr. George Granville Bantock; operation April, 1884. *Abstract*.—When patient first came under his notice, two years prior to operation, the tumor was of small size, but menstruation was excessive. Whether as a result of medical treatment or otherwise, it was a singular fact that the menorrhagia diminished until the flow became quite moderate and even scanty, while the tumor kept on growing. For over three months before operation menstruation had been absent. As the patient was single his suspicions were not aroused, and it was impossible to examine the uterine body, for the cervix was so drawn up that the os could only be touched with the tip of the finger, while the uterus was covered in

front by one of the tumors. After separating omental adhesions to the larger of the two tumors, which had undergone cystiform degeneration, and turning out the whole mass, it was easy to secure a very good pedicle at the level of the internal os. He confessed he was rather glad he had not diagnosed the pregnancy, for had he done so he probably would not have performed the operation. Uterus contained three months' fetus. He was happy to say that when last seen the patient was in excellent health and even contemplating marriage.

Case 9.—Abdominal Section, Supra-Vaginal Amputation of Pregnant Uterus, Complicating a Multilocular Fibroid Tumor; operator, Dr. James H. Etheridge. *Abstract.*—Mrs. A. B., aged 34, no children, first experienced uterine symptoms four years ago. Two years later suffered from retroversion and impaction of the uterus, at which time a sub peritoneal myoma was diagnosed. In May, 1886, four years since first symptoms, patient suffered from distressing nausea. Mammary changes supervened. In the ensuing three months the tumor grew rapidly, and Dr. Knox diagnosticated pregnancy. At the expiration of three months he decided to produce abortion. August 1, 1886, sound was introduced into uterus four inches. Its withdrawal was followed by a small amount of blood, the nausea and vomiting ceased, and the mammary symptoms disappeared. Nothing further followed indicating the previous existence of pregnancy or abortion, and the conclusion was reached that conception had not occurred. The rapid encroachment on the abdominal organs, her diminishing strength, emaciation and suffering were progressively killing her. From external examination it was found that the tumor extended from the right iliac fossa across the abdominal cavity in a straight line to the spleen. Its length was apparently double or treble its width. It was freely movable, free from adhesions, and solid. It presented great tenderness in right iliac fossa. Per vaginam, the cervix uteri was found very high up in the left iliac fossa, and the fundus uteri was apparently thrust into the right iliac region. The whole tumor moved with the uterus. A very slight resiliency, offered to conjoined manipulation, led me to think that I had to do with a fibro-cystic tumor of the uterus. The sound entered the uterus four inches and seemed to pass toward the umbilicus; tumor was removed by supra-vaginal hysterectomy. Patient died from septicaemia. Examination of the tumor showed it to be fibro-myxomatous, and that the uterine cavity contained a three months' fetus lying in its unruptured membranes. Foetus was evidently alive at time of operation. The cervical canal was five and one-half inches long. Weight of tumor, 10 pounds.

Case 10.—Fibro-Myxoma of Uterus Compli-

cated by Pregnancy. Reported by J. Lucas Worship, Esq. *Abstract.*—Mrs. C. C., aged 35, married two and one-half years, family history good, previous health good. Six months after marriage she suffered from severe pain in the left iliac region, but continued her service. Later she began to enlarge and was examined repeatedly, but no signs of pregnancy ever elicited save amenorrhœa. Never suffered from menstrual disorders. Tumor grew very rapidly and was irregular. Cervix was very high, firm and near the sacrum. A diagnosis of malignant tumor of the uterus was made and palliative treatment instituted, but the patient died in two months. Post-mortem examination revealed multiple fibro-myxoma of the uterus and pregnancy. Period of gestation at death, six months.

Case 11.—An abstract of a personal letter from Prof. Czerny, of Strassburg. The case was operated upon January 7, 1881, for supposed ovarian cyst: The cervix uteri was elongated, but not well defined from the fundus. No foetal pulsation. The uterine sound passed, without any obstruction whatever, 21 centimetres, and, as I thought at the time, through the tube into the abdominal cavity. On making the incision through the abdominal walls I at once recognized a gravid uterus and immediately closed the wound. I had evidently cut down to a gravid uterus, which was in an anti-flexed position and contained a large quantity of liquor amnii. I must add that the patient, aged 31 years, who in her capacity as midwife had delivered seventy-five women, strenuously denied that she was pregnant, and as firmly asserted that she had had the menstrual flow within a few days. There was some deposit of pigment about the nipples and areola. Without any bad results following the laparotomy she was safely delivered April 28, 1881. Some time after the cicatrix became indurated. This was remedied by making elliptical incisions and applying sutures, with good result.

INDICATIONS FOR OPERATION.

A study of the clinical histories, especially in the cases of fibro-myxoma, shows that there was an immediate demand for operative procedure. Robert Barnes so tersely states the indications for abdominal section in his case (see case 6) that the repetition is useful: "The condition of pain, retention, vomiting and commencing strangulation of impacted mass made it imperative to give quick relief." To these symptoms exploratory laparotomy reveals that other often fatal condition, peritonitis. Alex. Patterson's case was equally unpromising but happier in its results. Pain has been a prominent symptom in nearly all of the cases, often requiring the continuous use of anodynes. Palpation gave so much distress that, if done at all, it was imperfect and unsatisfactory. The rapid growth of the tumor has led

to dyspnœa, dysuria and constipation, or to more active obstruction of the bowels, œdema of the extremities, vomiting, emaciation and peritonitis. Universal experience has shown that temporizing with cases wherein there are symptoms such as have been related has been uniformly disastrous. The case of J. Lucas Worship, Esq., has been introduced in this article for the purpose of illustrating this point. Teachers have been often too prone to advise the waiting for extended observation. It seems to me that Mr. Lawson Tait has carefully and clearly enunciated that which is the best practice in one of his numerous controversial papers (*Am. Jour. Obstetrics*, vol. xxi, p. 295), in which he says: "Conditions within the abdomen are such that the life of the patient is evidently threatened, or the conditions combine in such a direction as to defy ordinary treatment and make life unendurable. Do not let any doubt as to accuracy of diagnosis stand in the way of an exploratory incision, for this will at once make a complete diagnosis possible and open a road for successful treatment."

DIAGNOSIS.

The influence of gestation upon fibro-myxoma demands our consideration. The consistency of the abdominal tumor has been variously described as firm, doughy, soft, fluctuant, and, indeed, the sense of fluctuation has led the surgeon more than once to puncture the tumor with the needle of the aspirator, or trocar. There can be no reasonable doubt that the different degrees of density are dependent upon three conditions, viz: the structure of the tumor, its situation, and certain degenerative changes. The growths made up largely of muscular elements are more readily affected by the increased intra-pelvic circulation of pregnancy, become more œdematous and grow more rapidly, than those in which fibrous elements preponderate. Intra mural fibro-myxomata, from their more intimate connection with the uterine walls, exhibit more active metamorphoses than do sub peritoneal ones with slender pedicles. Pregnancy may also bring about necrotic degeneration and softening from pressure. If the foregoing facts are sufficiently established, then sudden enlargement and softening of pre-existing fibro-myxoma is a valuable sign of pregnancy. But this rapid increase in volume has not been uniformly observed (*Gusserow Cycl.*, O. G., vol. ix, p. 300). Again, as this rapid growth is more frequently dependent upon increased vascularity, causes other than pregnancy may operate similarly. Tumors largely myxomatous often markedly enlarge during menstruation and grow with great rapidity. On the other hand, fibro-myxoma, in which sarcomatous degeneration takes place, or primary sarcoma of the giant, or small round cells type, are very rapid in their development and are attended with great pain.

In the case of Worship (l. c.) the diagnosis of malignant disease of the uterus was made. *A priori*, sudden increase and softening in a fibro-myxoma, to be of value as a presumptive sign of pregnancy, is dependent upon the exclusion of primary sarcoma, or sarcomatous degeneration, and the soft and rapid growing variety of fibro-myxoma.

For these reasons, in those cases where the diagnosis of pregnancy has been made upon the observance of rapid increase in size and softening in the fibro-myxoma, it is to my mind, although quite enough to arouse suspicion, based upon insufficient evidence. However, in connection with amenorrhœa and mammary changes it is of great value, and yet has not been referred to with uniformity by writers. Ectopic gestation may occur in these cases, giving rise to the same changes in the tumor (see cases of Smutz and Bayle). Amenorrhœa is a valuable symptom when it occurs. It will be noted that it occurred in eleven of the twenty-six cases, the study of which form the basis of the greater portion of this paper; yet there are circumstances which may materially modify its value as a symptom. For example, in my first case the patient gave a history of having suffered for extended periods from amenorrhœa. Again, in the case reported by Bantock the menstrual flow had been growing more scanty for a long period and finally ceased. The menstruation may continue, or an irregular flow may exist during pregnancy (Mundé, Bayle, Gusserow, and others). Abortion in cases of fibro-myxoma is most frequently induced by flooding. The sympathetic mammary disturbances which are observed in pregnancy were noted in four of the cases, but they are of themselves of no great value. In my second case they were present, but not more prominent than at any menstrual period. "The gastric, mammary and nervous symptoms of pregnancy sometimes result from ovarian disease." (Thomas.) Abdominal palpation, especially in the earlier months, can add but little in the elucidation of the problem and often has misled surgeons of great ability. Auscultation may reveal a bruit, but who will say that it is the bruit of fibroid or of pregnancy? Later both palpation and auscultation are invaluable, revealing ballottement, quickening, and the foetal heart sounds. The sign of pregnancy, to which, in later years, Braxton-Hicks has called particular attention, the alternating contraction and relaxation of the pregnant uterus, may be entirely obscured by the fibro-myxoma. English operators have laid great stress upon this sign.

Per vaginam, the vaginal venous injection observed in pregnancy does not differ materially from that occurring with the large fibro-myxoma, in which a concealed pregnancy may occur. In none of the cases here reported were there such changes in the cervix uteri as are regarded char-

ABDOMINAL SECTION COMPLICATED BY PREGNANCY NOT DIAGNOSTICATED BEFORE OPERATION.

Case.	Operator and Reference.	Age.	Civil Cond'n	Parity.	Condition Diagnosed Before Operation.	Condition Found at Operation.	Per. of Gest'n	Result.	Symptoms, if any, of Pregnancy Prior to Operation.	REMARKS.
1	M. Péan, <i>Chir. Chirurg.</i> Favé, '76, Vol. i, p. 677.	37	W	0	Fibromyxoma of uterus.	Fibromyx. of uterus and pregnancy.	4 m.	R.	None stated.	Rapid growing tumor very large, patient a widow 9 years; aborted 2d day; enucleation. Porro's operation.
2	Prof. Freund, pers'l com. Dr. J. W. Poucher, Poughkeepsie, N. Y., who saw the operation.	50	M	0	do do	do do	8	R.	None	do do
3	Geo. Granville Bantock, <i>Brit. Gyn. Jour.</i> , Vol. ii, p. 65, also personal com.	34	S	0	do do	do do	3	R.	Amenorrhœa for 3 months.	do do
4	J. H. Etheridge, <i>Am. Jour. Obst.</i> , Vol. xx, p. 69.	34	M	0	do do	do do	3	D.	do also mammary changes.	do do
5	Meredit, <i>Am. Jour. Obst.</i> , Vol. xiv, p. 923.	...	...	...	do do	do do	2	D.	Amenorrhœa for 2 months.	do do
6	Hofmeier, <i>Die Myo Tomie</i> , p. 76, etc.	41	M	0	do do	do do	3	R.	Preg'cy not absolutely excluded; amenorrhœa.	do do
7	Dinner, <i>Centrbl. f. Gynak.</i> , 1887, Bd. ii, p. 119.	49	M	0	do do	do do	2	R.	Amenorrhœa	do do Fœtus dead and macerated.
8	Karström, <i>Hygieia</i> for April, 1885.	36	M	1	Exploratory.	do do	5	...	None	Porro's operation
9	Kaltenbach, <i>Centrbl. für Gynekol.</i> , 1887, Bd. ii, p. 435.	33	M	1	Fibromyx. of uterus.	do do	2	R.	do	do do Disintegration of tumor begun; fœtus macerated.
10	Alex. Patterson, <i>Glasgow Med. Jour.</i> , April, 1885.	36	M	0	do do	do do	4	R.	do	Porro's operation.
11	R. Barnes, <i>St. Geo. Hosp. Rept.</i> , 1874-76, Vol. viii, 91-95.	...	M	0	Exploratory.	do do	3	D.	Amenorrhœa	do do
12	Wesseige, <i>Bull. de l'Acad. Royal de Belgique</i> , 11 Ser. 3, No. 4.	35	M	1	Fibromyx. of uterus.	do do	...	D.	do	do do Called attention to absence of signs of pregnancy.
13	A. C. Bernays, <i>Reprint Clin. Rept. Surg. Cases</i> .	35	S	0	do do possibility of pregnancy.	do do	Viable.	D.	No symptoms stated in report.	Porro's operation.
14	J. Lucas Worship, Esq., <i>Lond. Obst. Trans.</i> , Vol. xiv, p. 305.	35	M	0	Malignant tumor of uterus.	do do	4	D.	None	Patient died in 2 months without operation.
15	J. Henry, <i>Gyn. Jour.</i> , 1871, Vol. ix, p. 331.	...	...	0	Fibromyx. of uterus.	do do	4	D.	do	Patient died in 2 hrs. after operation.
16	Prof. Weith, pers'l com.	...	...	...	Cystoma ov. cyst.	do do	2	D.	do	Died from intraperitoneal hæmorrhage.
17	Bayle, <i>Annals de Soc. de Méd.</i> , St. Etienne.	...	...	...	do do	do do	...	D.	do	Patient flooded very severely.
18	H. Tuholski, <i>St. Louis Polyclinic</i> .	36	M	0	do do	do do	3	R.	Amenorrhœa 3 mos. before.	Fœtus dead and macerated; patient suffering from septicæmia.
19	W. Walter, <i>Brit. Medical Jour.</i> , Vol. ii, 1883, 718.	29	M	0	Fibromyxoma (s) exploratory.	Fibromyxoma and pregnancy.	4	D.	Amenorrhœa, slight mammary changes.	...
20	VanderVeer, <i>Trans. N. Y. State Med. Soc.</i> , 1888.	34	M	0	Exploratory, probable fibroid, extrauterine pregn'cy.	do do	4	R.	do do	Explor. inc. closed; aborted 2 mos. later; recovered.
21	VanderVeer, not reported.	35	M	0	Fibromyx. of uterus, probably explorat'y.	do do	4	D.	None	Aborted 10th day after operation, and died.
22	C. Smutz, <i>Brit. Gyn. Jour.</i> , Vol. iii, p. 691.	42	M	0	Fibromyx. of uterus.	Fibromyxoma and extrauterine preg.	...	D.	Amenorrhœa, slight mammary changes.	Porro's operation; death from shock.
23	Thos. Keith, rep'd in dis. by Skene, Keith, <i>Obst. Tr.</i> , Edinburgh, '84-85.	...	...	0	do do	do do	...	D.	None	By after-history learned that fœtus has been dead nearly 4 years.
24	Stoltz, <i>County Diseases of Women</i>.	...	...	0	do do	do do	...	D.	Not stated.	...
25	C. Kollock, personal com.	28	M	1	Exploratory.	Fibromyxoma and pregnancy.	3	R.	None, absolutely	Found macerated fœtus of 2½ or 3 mos.; menstruation normal in period and quantity.

PREGNANCY IN BICORNATED UTERI, ETC.

1	A. McDonald, <i>Obst. Trans. Edinburgh</i> , '84-85, p. 76.	23	M	0	Fibromyxoma of uterus.	Pregnancy in bicornated uterus.	...	R.	Very ignorant patient; indefinite history.	Hysterectomy; ut. cont'd macerated fœtus, 5 lbs.
2	Schlossowski, <i>Rev. Gen. de Clin.</i> , No. 13, 1889.	...	M	1	Exploratory.	Pregnancy in right corner of uterus.	7	R.	No def. sympt's; patient flooded severely.	Fœtus dead and macerated.
3	P. T. Mundé, <i>N. Y. Obst. Soc.</i> , May 7, 1889, personal com.	...	...	...	4th mo. extrauterine pregnancy.	Pregnancy in corner of uterus.	...	R.	Phys'l sympt's were all evid'ce of extrauterine preg. 4th mo.	Incision in abd'n closed; abortion; recovery (letter of May 11, 1890).
4	Dr. Janvrin.	...	...	...	Extrauterine pregnancy.	Pregnancy in corner of uterus.	...	D.	...	...
5	H. O. Marcy, pers'l letter.	...	...	...	Exploratory.	Interstitial pregnancy thought probable.	3	R.	No symptoms.	Aborted and recovery.

acteristic of pregnancy. The cervix has been described as firm, compressed transversely, elongated, and has been located high up behind the symphysis pubis, or back in the hollow of the sacrum, or operators have been unable to palpate it at all. Because of these distortions Hegar's

sign of early pregnancy has been of no assistance. The use of the uterine sound in both of my cases and in nearly all of the cases detailed (in table 1) has not aided in the diagnosis. So complete has been its failure that any facts determined by it should not enter into one's judgment of the case,

ABDOMINAL SECTION COMPLICATED BY PREGNANCY NOT DIAGNOSTICATED BEFORE OPERATION.

Case.	Operator and Reference.	Condition Diagnosed Before Operation.	Condition Found at Operation.	Result.	Symptoms, if any, of Pregnancy.	REMARKS.
1	Sir Spencer Wells; Abdominal Tumor, Philadelphia, 1885.	Ovarian cyst	Ovarian cyst and pregnancy.	Recovered.	None stated.	Pregnant uter. punctured by trocar; Casarean section.
2	Thos. Hillars, Australian Med. Jour., February, 1875.	do do	do do do	do	None	do do patient single woman.
3	Wm. H. Byford, Byford's Dis. of Women, Med. and Surg., 4th Ed., 753.	do do	do do do	do	None stated.	do do
4	Erskine Mason, Byford's Dis. of Women and Med. Rec., N. Y., 1877, Vol. xii, p. 749.	do do	do do do	Died.	do do	Preg. uterus punctured, wound closed by sutures, abort'n and death; patient single woman.
5	Geo. Fortesque, Australian Med. Gaz., 1884, Vol. iii, p. 169.	do do	do do do	do	do do	Trocar puncture of preg. uterus; Porro's operation.
6	Esmarch, Kiel, personal letter, Kiel, 1877.	Ovarian cyst, multilocular.	do do do	Recovered.	None	Delivered of a healthy male 6 mos. after operation.
7	Pollock, London Lancet, 1862, ii, 277.	Ovarian cyst	do do do	do	None stated.	The cyst was tapped 4 mos. before operation and pat. aborted at that time.
8	Bateman, Lon. Lan., 1869, ii, 410.	do do	do do do	do	do do	Patient went to term safely.
9	J. Marion Sims, Trans. American Gyn. Soc., Vol. v, p. 108.	do do	do do do	do	do do	
10	W. L. Atlee, Trans. Am. Gyn. Soc., Vol. v, p. 108.	do do	do do do	do	do do	Pat. died 2 mos. later from vomiting of pregnancy.
11	do do	do do	do do do	do	do do	Patient went to term
12	F. Bird, Trans. Am. Gyn. Soc., Vol. v, p. 108.	do do	do do do	do	Absolutely no signs of pregnancy.	Patient abort'd 2d day after operation.
13	G. Kimball, personal letter. . .	do do	do do do	Died.	Pregnancy suspect'd but positively denied by patient.	Died from peritonitis.
14	do do	do do	do do do	do	Preg'cy suspected by att. physician, who explored uter. day before operation.	Died from peritonitis.
15	Dr. Dunlap, Trans. Am. Gyn. Soc., Vol. x, p. 111.	do do	do do do	do	Operator misled by statements of physician.	Patient aborted, sank rapidly and died.
16	Thad. A. Reamy, personal letter.	do do	do do do	do	No symptoms.	Pat. aborted and died.
17	J. C. Warren, personal letter . .	do do	Dermoid cyst of ovary and pregnancy.	Recovered.	do do	
18	A. Reeves Jackson, pers'l com. .	do do	Ovarian cyst, pregnancy	do	do do	Patient safely delivered at term.
19	Hunter McGuire, personal com.	do do	do do do	do	do do noted or suspected.	Patient safely delivered at term.
20	S. D. Gross, personal com. from Dr. J. M. Barton.	Exploratory.	do do do	do	None stated.	Patient aborted same night.
21	E. W. Cushing, Annals of Gyn., Boston, 1888, Vol. i, p. 335, also personal communication.	do	Parovarian cyst, 40 lbs., and pregnancy.	do	Amenorrhœa	Patient safely delivered at term.
22	O. Prince, personal com.	Parovarian cyst and pregnancy.	Parovarian cyst and pregnancy.	do	do	Patient safely delivered at term.
23	C. Kollock, personal com.	Ovarian cyst, large.	Small ovarian cyst, pregnancy, twins.	do	None	Safely deliv. of twins, all well 3 mos. after.
24	Geo. E. Jarvis, Abst. of Records Hartford General Hospital.	Ovarian cyst (?)	Ovarian cyst, pregnancy.	Died.	None stated.	Patient aborted on 3d day and died.
25	H. A. Kelly, personal com.	Exploratory.	Large elongated ovary, 2 3/4 in. long, 1/4 in. wide, and pregnancy.	Recovered.	None	Safely deliv. at term by forceps of living child.
26	Dr. Cameron, St. John's Hospt., Toronto, personal com. from A. H. Wright.	Hydrosalpinx	Hydrosalpinx and pregnancy.	do	do	Safely delivered at term.
27	Dr. Cameron, St. John's Hospt., Toronto, personal com. from Dr. A. H. Wright.	Ovarian cyst.	Ovarian cyst, pregnancy.	do	do	Has now nearly reached full term.
28	Dr. Winkler, Munich, personal com. from operator.	Ovarian cyst, multilocular.	do do do	do	do	Pat. safely deliv. 3 1/2 mos. after op.; when uterus expos'd child moved vigorously.
29	Sir Spencer Wells, Wells' Abd. Summary, p. 119.	Multilocular ovarian cyst.	do do do	do	do	
30	do do p. 120.	Ovarian cyst.	do do do	do	do	Abortion on 6th day.
31	Dr. John E. Summers, Omaha, pers'l com. fr. Dr. R. C. Moore.	do do	do do do	do	do stated.	
32	do do	Ovarian cyst and pregnancy.	do do do	do	do	
33	Mr. Burd Shrewsbury, Wells' Abd. Surgery, Ed. 1885.	Ovarian cyst.	do do do	do	do stated.	Abortion.
34	Mr. Cook, London Lancet, Vol. ii, 1865.	do do	do do do	do	do	Abortion.

and I am in great doubt if it should be used at all. Besides, the great difficulty of introduction and the danger of perforating the uterine walls are not altogether innocuous. In sixteen cases there were either no signs stated, or an emphatic statement that there were no signs of pregnancy present. Granted that in a given case of fibromyoma the diagnosis of pregnancy is made, how does the operator know that the gestation is not ectopic, or that it is not located in a rudimentary

PREGNANCY UNCOMPLICATED BY NEW GROWTHS.

Case.	Operator and Reference.	Condition Diagnosed Before Operation.	Condition Found at Operation.	Result.	Symptoms, if any, of Pregnancy.	REMARKS.
1	Olshausen, personal com. Dr. F. C. Bressler.	Ovarian cyst	Pregnancy and hydramnion.	Recovered.	None stated	Mistake discovered after abd'l incision.
2	Wm. Varian, Phila. Med. and Surg. Rept., 1888, Vol. ix, 457.	do do	Pregnancy and hydramnion.	do	None stated; patient wilfully deceived operator.	Successful Cæsarean section.
3	O. Prince, personal com	Fibromyxoma	Pregnancy	do	Patient deceived operator by giving history of prof. menstruation and gradual increase for long period.	An amusing acc't given in Nashville Med. Journal.
4	Jas. Overton, Nashville Med. Jour., July, 1866.	Ovarian cyst	do	do	None stated.	Porro's operat'n; coroner investig'd case & op'r exonerated.
5	Warren, Brit. Med. Jour., Vol. ii, 1881.	Extrauterine pregn'cy.	do	Died.	Mammary changes, nausea and vomiting; expulsion of decidua memb.	Both op'tors now dead and cases unpublished, hence particulars are unknown.
6	Joshua Bradford, personal com. Dr. W. W. Dawson.	Ovarian cyst	do	do	Operator misled by husband and physician.	Safely deliv'd at term; good recovery.
7	Henry Miller, personal com. Dr. D. W. Vandall.	do do	do	do	do	do
8	Geo. W. Bayless, personal com. Dr. D. W. Vandall.	do do	do	do	do	do
9	E. E. Montgomery, pers'l com. from operator.	Enlarged retroverted uterus, pregnancy suspected.	Pregnancy	Recovered.	No symptoms, but enlarged uterus.	Safely deliv'd at term; well since.
10	Prof. Czerny, Strassburg, pers'l com. from operator.	Elongated cervix, uterus antiflexed, pregnancy not suspected.	do	do	Mammary changes.	Safely deliv'd at term; good recovery.
11	Joseph Price, Philadelphia, personal com.	Adherent ovary and pelvic adhesions.	Pelvic adhesions and pregnancy.	do	None	do

mentary horn of a bicornate uterus. Experience has shown that these errors have occurred, and if the diagnosis is to be exact, differentiation is demanded. But the possibility of the diagnosis of simple ectopic gestation before rupture of the tubal sac and hæmorrhage is at least vigorously assailed, not only abroad, but in America. Manifestly this is no time for entering into the discussion of the merits of this last important question. I would not have it understood that, in my opinion, the diagnosis of early pregnancy as a complication of fibro-myxoma, *i. e.* before the fourth month, is impossible in all cases, but that the diagnosis is at the best a matter of presumption, and that it is often impossible when immediate operative interference is demanded. With no desire to be critical, I must say that many of our text-books give very meagre accounts of pregnancy as occurring with fibroids. Barnes, after writing at length, came to the conclusion "that the chief characteristic in the complication was the want of uniformity in the uterus." His statement regarding the diagnosis of pregnancy with ovarian cyst is equally as clear. Thomas makes no mention of the complication, and Byford, after referring to the mistakes made by himself, Sims, Wells and others, says: "A careful examination of the cervix uteri, the abdomen and the breasts for evidences of pregnancy will seldom fail to make the diagnosis of this complication clear." Hart and Barbour, Emmett, Hewitt, Simpson, Scanzoni, Courty and many obstetric authors either do not mention the complication, or advise waiting. Prof. Skene relates the histories of two cases wherein pregnancy occurred with fibroids, and in which the diagnosis was not made until months later. Karl Schroeder expresses the

opinion "that it may be exceedingly difficult to differentiate between simple fibroids and fibroids complicated by pregnancy." Hirst (*Am. Sys. Obstetrics*) says: "In rapid growing soft myxoma the diagnosis may be exceedingly difficult or impossible." Gusserow (*Cycl. O. G.*, vol. ix) rather neglects early pregnancy, but attributes the error in the latter stages to carelessness. The editor of the last edition of "Speigelberg's Midwifery," 1887, makes the statement that, "as a rule, there is very great difficulty, especially in the cases of intra-mural growth, since, at any rate during the first four or five months, they often conceal the pregnancy. The most careful examination may not elucidate the case." After the fourth or fifth month the error has occurred but three times. In Karström's case ascites as a complication obscured the diagnosis. In the case of Prof. Freund, of Strassburg, the patient, 50 years old, always sterile, presented no symptoms that led even to a suspicion of pregnancy. It is only fair to Dr. Bernays to say that he suspected the possibility of pregnancy, but from the history of the case there seemed no ground for the suspicion, and the suspicion was not confirmed in consultation.

There is no error in diagnosis which brings the physician into so much undeserved disrepute in the popular mind as a failure to recognize the presence or absence of pregnancy. Yet I am familiar with several cases where this error has either led to abdominal section, or all the preparations for one have been made. Recently a member of the British Gynæcological Society amused a meeting exceedingly by relating a case wherein a specially qualified operator journeyed many miles to a case.

After his arrival, late in the afternoon, he examined the case carefully, decided the growth to be fibroid, and that it should be removed. Being much fatigued by his journey he decided to remain and perform the operation the following morning. Early the next morning he was gravely informed that his services would not be required, as the patient had, during the night, given birth to a fine baby, and the tumor had disappeared. Nor does this experience stand alone. Others have brought cases to the operating table with a dilating os uteri. Of the nine cases of simple pregnancy found in the table, five of them occurred early in the history of abdominal surgery, when methods of differential diagnosis were not as well taught and practiced as now. I want to call your attention particularly to the case of Dr. Wm. Varian. From the history of the case I have no doubt that many, if not all of us, would have been led into the same disagreeable error. Dr. Prince had a similar experience. The frequency of the complication of undiagnosed pregnancy in single women will be noted in the tables. I am reminded of a remark attributed to the late Prof. MacNaughton, in answer to the inquiries of an anxious mother who had called him very late one night to see her daughter, who had just returned from a ball in a blissful state of intoxication: "Ah, madam, the best slip, the most cautious fall; your daughter will be better in the morning." It is well to have the quaint saying of the good old Scotchman always in mind when single women present themselves with abdominal tumors, and we should never be in a hurry to operate. The history obtained from the patient, and often from her relatives as well, will be full of deceit at least, and may be, as in Prince's case, made to fit minutely a variety of actual disease. Such cases should be subjected to the most painstaking physical examination; nor should any protestations upon the part of the patient deter the surgeon from making a complete examination of the vagina and breasts, as well as of the abdomen. His judgment must be based entirely upon the physical examination.

Pregnancy as a complication of ovarian cyst is met with considerable frequency, and is not always diagnosed before operation. We can hardly enter into the discussion of the symptoms, for in the twenty-eight cases that go to make up the table none are stated save in one case, amenorrhoea. In some of the cases the operators state that there were absolutely no signs of pregnancy. The period of gestation in twenty-one cases was before the fourth month. Three others occurred in single women, and the remaining two cases were at about the fifth month. The presumptive signs of pregnancy occurring with fibro-myxoma are, in cases of ovarian cyst, obscured or modified; yet to some of them greater diagnostic value can be attached. Close attention to men-

strual disorders will occasionally determine the fact that the patient's menstruation has been perfectly normal until a recent period, when it has ceased altogether. This is sufficient ground for suspicion. The examination of the breasts should be a matter of routine; yet the evidence obtained will be of no great value. The vaginal examination here will be of greater value than with fibro-myxoma. If the uterus can be palpated and found regularly enlarged, yet independent of the tumor, if the cervix is softened and os patulous, if the vaginal walls are tinted, then there exists strong presumptive signs of pregnancy. Hegar's sign in such cases, if demonstrable, makes the diagnosis absolute. Palpation of the abdomen in the earlier months, when the error occurs, is of no value. When the uterus rises into the abdomen, then palpation and auscultation are with ballottement, and the sign of Braxton-Hicks sufficient, as a rule, to make the diagnosis. But the pregnant uterus may be obscured anteriorly by the large cyst; it may be retroverted and impacted in the pelvis, or drawn up and dislocated laterally by the rapidly increasing cyst, so that it will be impossible to explore it satisfactorily; then the diagnosis is impossible. When the slightest suspicion of pregnancy exists in connection with ovarian cyst, the use of the sound is absolutely unjustifiable, although it seems, in the cases where it was used, that it only confirmed the error in diagnosis. Accumulated experience has shown conclusively that abdominal section for ovarian cyst in the pregnant woman should be done generally and without the previous induction of abortion.

Conclusions:—1. Finally, from the study of the seventy cases, I am convinced that the errors of diagnosis are dependent, in a large proportion of the cases, upon conditions which make it absolutely impossible, when these conditions recur in other cases, to avoid the same diagnostic conclusions.

2. That it is the duty of every operator, before making an abdominal incision, to secure personally, or by a specially qualified assistant, a fully classified, written statement of the facts which go to make up the clinical history of the case, together with the results of the physical exploration made by the operator and his consultants, using a formal blank statement (that of Sir Spencer Wells, for example), so that no facts may be omitted. That no part of this duty should be delegated, except under supervision, to internes of hospitals.

3. That the probable diagnosis should be based upon the physical signs contained in the notes, corroborated, with few exceptions (unmarried and ignorant patients), by the rational signs contained in the clinical history, and not by simple abdominal palpation and "the dim light of a pelvic examination."

4. That whenever the slightest probability of pregnancy exists, it should be fully explained to the patient and her friends.

5. That the necessity for operative relief and the consequences of delay or neglect should be carefully stated to the parties interested, before obtaining their formal consent to the operation.

6. That it is the duty of every operator to report fully all such cases, that the methods of diagnosis may be improved, if possible.

7. That it is the duty of the profession at large to maintain that pregnancy may be absolutely concealed, especially prior to the fourth or fifth month, by other intra-abdominal conditions.

Bibliography in addition to references found in tables :

Barnes, Simpson, Hart and Barbour, Hewitt, Jones, Courty, Scanzona, Hagar and Kaltenbach, Pean, Hofmeier, von Flammerding, Tait, Wells, Thomas, Emmett, Skene, Byford and Goodell.

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CHRONIC ENDOCARDITIS.

Read in the Section of Practice of Medicine at the Fortieth Annual Meeting of the American Medical Association, June 28, 1889.

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It is proper that I should offer to you some reasons for selecting so ordinary a disease as is chronic endocarditis as the subject for this paper. But the ordinary diseases are, after all the important ones, and often as we see them we never really know them well enough. Any fresh record of facts, any new way of grouping, or of looking at these facts must be of some little service. It is the object of this paper, therefore, not to give a systematic account of endocarditis, but to draw attention to some features of the disease; not to give a history of the views of other observers, but to state simply what I have put together from my case books and post-mortem records.

Of the ordinary diseases few are more common than is chronic endocarditis. In few of them is there so great a variety in the severity of the symptoms. From the condition of a trifling inconvenience to that of a distressing and fatal disease there seems to be no limit to its various phases. We constantly meet with patients whose heart valves are seriously damaged and who yet enjoy good health, can follow laborious occupa-

tions and are often ignorant that they have any disease. On the other hand, we, with equal frequency see patients in whom the same valvular lesions are attended with the most serious symptoms and with death. It is, therefore, a matter of practical importance to determine as accurately as we can why it is that some of these patients do so well and others so badly. For it is in this way that we are most likely also to determine a rational treatment for the disease.

It seems evident that nearly all the most important symptoms of chronic endocarditis are due to the disturbances produced in the distribution of the blood throughout the body. It is by these disturbances of the circulation that the cerebral and pulmonary symptoms, the loss of nutrition and the dropsy are produced. The problem before us, therefore, is to determine why in some cases of chronic endocarditis there are disturbances of the circulation, and why in other cases there are not.

It might seem at first that the solution of this problem is an easy one, that the disturbances in the circulation are simply in proportion to the stenosis or insufficiency of the valves. A very moderate experience, however, is sufficient to show that this is not the case. The problem is a complicated one, and the disturbances of the circulation are due to a number of causes which act singly or together.

We may enumerate these causes as follows :

The endocarditis.

The dilatation and hypertrophy of the ventricles.

The inflammation or degeneration of the wall of the heart.

The inflammation of the coronary arteries.

The abnormal heart action.

The associated pulmonary emphysema, chronic endarteritis, and chronic Bright's disease.

To follow out the mode of action of all these causes is not possible in a paper of this character. I confine myself to the consideration of three of them : The endocarditis ; the abnormal heart action ; and the secondary and complicating changes in the kidneys. Not that the others are unimportant, but that these three are perhaps the most important of all.

1. The Endocarditis.

In thinking of persons with valvular lesions, we must remember that some of these persons, while under our observation, are suffering from chronic endocarditis, and that some are only suffering from the changes produced in the valve by an endocarditis which no longer exists. In the one case they suffer from a chronic inflammation, in the other from a deformity. It may be indeed that such deformity leads to progressive changes in the cavities and walls of the heart. But this is much less likely to happen than if the changes in the valves are also progressive.

Chronic endocarditis may directly follow acute endocarditis; it may be developed after a long interval in valves damaged by an old attack of endocarditis; it may from the first be a chronic lesion. We find, especially in children, an uninterrupted history of cardiac symptoms beginning with an acute attack and continuing as a chronic disease for years. We find in older persons with marked cardiac symptoms developed late in life a history of an acute endocarditis in childhood, from which they had apparently recovered. We find in adults the gradual development of one cardiac symptom after another, so slow and so gradual that we can hardly date the beginning of the disease.

Chronic endocarditis, when it has once commenced, seems to have a natural tendency to persist and to involve other portions of the endocardium. The cases vary as to the activity of the endocarditis and the intermissions in the course of the inflammation. It is apparently possible for the endocarditis to stop at any time, and the valves will then undergo no further change. Chronic endocarditis is a productive inflammation with the formation of new tissue, but without exudation. In its most active form there is a very considerable growth of cells and also a death of cells, so that the inflamed endocardium is thickened in some places, ulcerated in other, and on the roughened surfaces thus made, thrombi are formed. This is the most active and dangerous form of the disease. In its more chronic form the growth of cells is not as great, the cells do not die, the basement substance is thickened. Although the surface of the endocardium is somewhat roughened, and small vegetations are often formed, there are no thrombi.

In either form of inflammation there may be added degeneration or calcification of the inflamed endocardium and of the thrombi. It may very well happen that the patient, after suffering from the chronic form of endocarditis for years, may then develop the more active form in the same valve, or in one of the other valves.

In the more active form of the disease a large number of the cases run their course within six months from the time of the commencement of their symptoms. A considerable number do not live longer than six or seven weeks. The symptoms are pronounced: Disturbed heart action; delirium, convulsions, paraplegia; cough, hæmoptysis, dyspnoea; nausea and vomiting; dropsy; loss of flesh and strength and anæmia, and a rise of temperature. These patients are apt to get rapidly worse, but there may be intermissions, and the inflammation may stop altogether. It seems evident that in the treatment of these patients we must remember that they are suffering from an inflammation of some activity, and that rest in bed, the use of cold or of counter irritation over the heart are measures likely to be of use.

On the other hand, in the slow form of endocarditis the disease lasts for many years. There are usually intermission in its course, and it may stop altogether at any times. Many of the patients have no symptoms. In those who do, some one symptom is first developed and then, as the disease progresses, others are added. These patients are regularly better for an out of door life, with as much exercise as they are able to take.

2.—The Abnormal Heart Action.

It is possible for a chronic endocarditis to run its entire course with a perfectly regular action of the heart. This, however, is the exception. The rule is, that the heart's action is disturbed, and this disturbance is often the most important feature of the disease, and furnishes the principal indication for treatment. Such disturbance of the heart's action may be due to:

a. The endocarditis existing as an inflammation of some activity and producing changes in the heart's action in the same way as does an acute endocarditis.

b. Such a degree of stenosis, or insufficiency of the valves as will mechanically interfere with the heart's action. This often does not become a factor of much importance until the stenosis or insufficiency are well marked, and for this reason it is easy to be deceived as to the character of the lesion.

c. Dilatation and hypertrophy of the ventricles are often present, and certainly have their effect in changing the character of the heart's action.

d. Chronic myocarditis and disease of the coronary arteries produce the most extreme and intractable disturbances of the heart's action. Fortunately they are not very common.

e. Contraction of the smaller arteries throughout the body with increase of arterial tension and venous congestion. This condition, although a frequent complication of endocarditis, nephritis, endarteritis, emphysema, and occurring as an independent condition in some cases of angina pectoris, is yet something concerning which our knowledge is imperfect. Whether contaminated blood irritates the arteries, whether the nervous centers are irritated by the contaminated blood or in what way the contraction of the arteries is produced, we do not know. But such a contraction is produced and lasts for hours, days or months. The same patient may never have but one such attack, or he may have many. In patients who have had many attacks, the muscular coat of the small arteries is thickened. Such a contraction of the arteries at once changes the character of the heart's action. It becomes rapid, forcible, feeble and tumultuous. The degree of the cardiac disturbance is apparently in proportion to the degree and suddenness of the contraction of the arteries, but is not related to the severity or extent of the endocarditis. In the early stages of endocarditis we very often see patients who

complain of dyspnœa on exertion and on lying down with precordial pain. Otherwise they feel perfectly well and have normal urine. We find the heart enlarged, its action rapid and forcible, and a murmur indicating disease of one of the valves. The radial pulse is distinctly tense. If by treatment the arteries are dilated the dyspnœa disappears, the heart's action becomes natural and the patients feel well. Or, in a further advanced and progressing endocarditis we may follow patients for years who, in spite of their endocarditis, feel well except when they have attacks of contraction of the arteries. When they have such an attack dyspnœa and other symptoms are developed and continue for weeks or months. Then as the attack subsides, the symptoms disappear and the patients feel well. The first attacks yield readily to treatment. But as time goes on the attacks are more frequent and more obstinate. The pulse is tense, but small. The heart's action is no longer forcible, but feeble or tumultuous. Occasionally we see patients who go on with a chronic endocarditis for many years, but with few or no symptoms. Then with a slight pleurisy, or pericarditis, or without discoverable cause a sudden, extreme and intractable contraction of the arteries is established, causing the most urgent dyspnœa and continuing up to the time of the patient's death. These attacks of the contraction of the arteries are at first readily relieved by the drugs which dilate the arteries—nitrate of amyl, chloral hydrate, nitro-glycerine, opium and potassium iodide. The patients do well with an out-of-door life and regulated exercise. But as the endocarditis advances and the valves are more damaged, especially by stenosis, these attacks are less readily relieved, and it becomes necessary to keep the patients more and more quiet.

f. Unknown causes which apparently act through the nerves which regulate the action of the heart. These form a large, important and obscure group of cases. In some of these cases the abnormal heart action is associated with advanced disease of the valves, and it is only by the results of treatment that we can discriminate how much of the disturbance of the heart's action is due to the valvular lesion, and how much to nervous influences. The pulse is of low tension, feeble and rapid. The heart's action is feeble or exaggerated. The condition of the patients is often very bad, and yet in some of them very marked improvement is obtained by treatment.

These patients at first require complete rest, then massage and later regulated exercise. The most efficient drugs are digitalis, strophanthus, caffeine, convallaria and barium chloride. The heart seems to be always really a weak heart even though its action is exaggerated. It is often natural to believe that there is degeneration or inflammation of the walls of the ventricles, but

yet after death no such changes are found. In other cases the endocarditis is not advanced, the valves are but slightly narrowed or insufficient, there is little or no change in the size of the heart. The heart's action is rapid, either feeble or exaggerated. The pulse is soft and rapid. The patients often have pain or abnormal sensations referred to the heart, the general health may be very much impaired. Although these patients have endocarditis, yet it is really the abnormal heart action which makes them ill and calls for treatment. Some of these patients are very easily managed, the heart's action soon becomes normal, the pain disappears and the patients feel well, although the lesion of the valve still exists. Some of them, on the contrary, do not improve. The disturbance of the heart's action and other symptoms continue, but yet the patients do not die, nor get worse beyond a certain point. There are, however, occasional cases in which the heart's action becomes very bad, the patients are very feeble and die. After death we find but moderate changes in the valves and no changes in the walls of the heart. The management of these cases is apt to be difficult. Attention to the diet, the general health, the habits, the climate, the exercise is of especial importance. Of drugs, one or other of the cardiac stimulants is often indicated.

3. The secondary and complicating changes in the kidneys.

Of the persons who suffer from chronic endocarditis a large number never have any complicating disease of the kidneys. In the persons who die from endocarditis it is rare to find normal kidneys. In judging of the frequency of the kidney lesions the most certain criterion is the autopsy. During life it is not sufficient to examine for albumen and casts, which are often absent, but the quantity of the urine, its specific gravity, and the proportion of urea to the ounce of urine must also be determined. Advanced changes in the kidneys often exist in patients whose urine is said, after a superficial examination, to be normal.

In persons who die from chronic endocarditis we find :

Chronic congestion of the kidney.

Chronic degeneration of the kidney.

Chronic nephritis.

1. Chronic congestion of the kidney.

The kidneys are of medium size, or large. Their weight is increased, they are hard, uniformly congested, their surfaces are smooth. The epithelium of the cortex tubes is opaque, flattened or swollen. The glomeruli show a dilatation of the capillaries, with more or less thickening of their walls and the swelling of the cells which cover their walls. In the stroma there is nothing but some exaggeration of the subcapsular areas of connective tissue which are found in

normal kidneys. The arteries are normal, the pyramid veins are congested and sometimes dilated. The urine is diminished in quantity at the times when the heart's action is bad, and returns to the normal when it is better. It is apparently never increased except from accidental causes. The specific gravity is usually between 1020 and 1025, but may for a time be down to 1010, or up to 1035. The quantity of urea is rarely less than 10 grains to the ounce, it may be as high as 21 grains. The specific gravity and the quantity of urea must be judged by examining the urine of 24 hours for several days, with the proper allowance for diet and exercise. Albumen and casts are absent or present in very small quantities. The effect of the congestion of the kidneys on their functions is simply to diminish the quantity of urine. The quality of the urine is good, and the exudation from the vessels amounts practically to nothing. Apparently the only way in which this lesion of the kidney can add to the symptoms of the endocarditis, is by the diminution in the quantity of the urine.

2. Chronic degeneration of the kidney.

The kidneys are considerably increased in size and weight, weighing together from 16 to 20 ounces. Their surfaces are smooth; the cortical portion is thickened, of pink or white color, the pyramids are red. The gross appearance is that of the so-called large white kidney. The epithelium of the cortex tubes is swollen and opaque. In the glomeruli there is dilation of the capillaries. There are no changes in the stroma, or in the arteries, the pyramid veins may be congested. The quantity of the urine varies with the changes in the action of the heart, sometime abundant, sometimes scanty, sometimes suppressed. The specific gravity is not diminished, nor is the proportion of urea to the ounce decreased. Albumen and casts in small quantities are more frequently present than with chronic congestion. While it is difficult to separate the kidney symptoms from the heart symptoms, yet one has the impression that this kidney lesion is more serious than chronic congestion, and has its effect in increasing the symptoms of the endocarditis, especially the loss of nutrition and the anæmia.

3. Chronic nephritis.

A chronic inflammation of the kidneys may follow chronic congestion or chronic degeneration, it is then evidently a direct result of the endocarditis; or it may be developed as an independent inflammation and is to be regarded as an associated and not a secondary lesion.

a. Chronic nephritis following chronic congestion of the kidney. The kidneys remain increased in size, or become somewhat smaller. The capsules are adherent, the surface of the kidney is finally nodular, the consistence of the organ remains hard, and the general venous congestion continues. The epithelium of the cortex tubes

is opaque, swollen or flattened. The tubes may contain coagulated matter. The straight tubes of the cortex and pyramids may contain cast matter. The capillaries of the glomeruli are swollen, their walls are thickened, there is an increase in the size and number of the cells which cover the capillaries. There is a considerable growth of connective tissue in the stroma distributed according to the arrangement of the normal subcapsular wedges. Within these masses of new connective tissue the tubes and glomeruli are atrophied. The walls of the arteries may be thickened, the capillary veins in the cortex may be dilated and their walls thickened. The quantity of the urine varies very much at different times in the same patient, sometimes it is above, sometimes below the normal. The specific gravity falls to 1020 or 1016. The proportion of urea to the ounce is somewhat diminished. Albumen and casts in moderate quantities are regularly present at some time in the course of the disease, but during much of the time they are entirely absent. The patient seems to be especially liable to spasmodic dyspnoea and to loss of flesh and strength.

b. Chronic nephritis following chronic degeneration of the kidney. The kidneys are large, their surfaces are smooth, the cortex thick and white, the pyramids red. The epithelium of the cortex tubes is opaque, flattened or swollen. The convoluted tubes contain coagulated matter, the straight tubes cast matter. The capillaries of the glomeruli are dilated and the cells covering the capillaries are swollen. There are no changes in the arteries. The quantity of the urine varies at different times, often it is very scanty. The specific gravity keeps close to the normal, or may even be above it. The proportion of urea to the ounce of urine is not diminished. Albumen is regularly present in considerable quantities, casts are somewhat less constant. The patients who have this form of nephritis are apt to exhibit the anæmia and dropsy in a very marked degree and to get worse rapidly.

Chronic nephritis is associated with chronic endocarditis, but apparently not caused by it.

Such an association of chronic nephritis with chronic endocarditis is of very frequent occurrence. Either one of the lesions may be developed the first, either one may be of the most importance.

In all of these cases, while there is much variety in the gross appearance of the kidneys the changes in structure are much the same. The epithelium of the cortex tubes is degenerated; some of the glomeruli are converted into fibrous tissue, in others there is only a growth of the tuft cells; there is a considerable growth of connective tissue in the stroma; the walls of the arteries are thickened. There are, however, two points in which these kidneys differ from each other. The quantity of exudation from the blood vessels

and the rapidity of the changes in the kidney. To these two points of difference correspond the differences in the clinical histories. We may, therefore, for clinical purposes distinguish three forms of chronic nephritis.

1. Chronic nephritis with large and continued exudation of serum from the blood vessels of the kidney into the tubes. The urine is sometimes diminished, sometimes very much increased in quantity. The specific gravity is lowered, often at about 1016. The proportion of urea to the ounce of urine is diminished. The urine constantly contains considerable quantities of albumen and numbers of casts. The patients do badly. Dropsy, anæmia, loss of flesh and strength and chronic uræmia are the regular symptoms.

2. Chronic nephritis with moderate and intermittent exudation from the blood vessels. The urine is more or less increased in quantity, except when the patient has an attack of contraction of the arteries, then it is diminished. The specific gravity is lowered. The proportion of urea to the ounce of urine is diminished. During much of the time no albumen or casts are present, but from time to time when the patient is doing badly in other ways they appear in moderate quantities. These patients usually live for a number of years, slowly getting worse. They are especially liable to attacks of contraction of the arteries with dyspnoea, headache, sleeplessness and convulsions.

3. Chronic nephritis with little or no exudation from the blood vessels, the nephritis advancing very slowly. These kidneys are considered by some authors to be examples of fibroid degeneration, rather than of chronic inflammation. The urine shows no change except that the specific gravity and the proportion of urea from year to year are gradually lowered. Some of the patients never have any renal symptoms. Some of them have attacks of contraction of the arteries. Some of them simply lose some flesh and a great deal of strength and die quietly.

PROPERITONEAL HERNIA.

Read in the Section of Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association, held at Newport, June, 1889.

BY CHARLES W. DULLES, M.D.,

SURGEON TO OUT-PATIENTS IN THE HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA, AND IN THE PRESBYTERIAN HOSPITAL, IN PHILADELPHIA.

The subject of properitoneal hernia is so little known in this country that I believe that there have been but three cases with this title recorded by American surgeons. One of these I reported to the Philadelphia Academy of Surgery, December 6, 1886; the second was reported by Dr. Hartley, of New York, in the *N. Y. Medical Record*, about a week later; and the third by Dr. Torrey,

of Brooklyn, in the *Annals of Surgery*, March, 1888.

For this reason I have thought it worth while to bring the subject before this body for consideration and discussion.

In studying the literature of properitoneal hernia I have come to the conclusion that very many cases must have come under the observation of American surgeons who did not classify them as they would have done had they understood them thoroughly. One reason for this conviction rests upon the titles which are at the head of a number of articles upon hernia, as they may be found recorded in the Index Catalogue of the Surgeon-General's Library at Washington. Another rests upon the fact that since the careful studies of this subject by Streubel, Krönlein and Küster in Germany have been published, a considerable number of cases have been specifically recorded in that and in other countries.

It must not be supposed that this fact indicates a mere refinement in diagnosis. It means much more than this; for, before these studies were made, the history of properitoneal hernia was one of unvaried disaster. The diagnosis was, we may say, invariably made on the *post-mortem* table. Since Krönlein pressed his opinions upon the attention of his professional brethren the state of affairs has been very different. Now this form of hernia can not only be diagnosed during the life of the patient, but it can also be successfully treated.

In a general way a properitoneal hernia may be said to be one which occupies an abnormal position within the abdominal or pelvic wall in front of the peritoneum. Sonnenburg has suggested that the term *præperitoneal* would be more exact. This is true; but we may, I think, hold to the term proposed by Krönlein, lest we introduce confusion by a change which is not important.

A true properitoneal hernia lies between the parietal peritoneum and the overlying mass of muscles, or—when pelvic—the bones. There is also a form of hernia which occupies a position between the planes of the abdominal muscles, which may be called “intermuscular;” and another which lies outside of them and just beneath the skin and superficial fascia. For the last Küster has proposed the term “hernia inguino-superficialis,” and he divides it into three varieties: 1, hernia inguino-superficialis abdominalis; 2, hernia inguino-superficialis cruralis; and 3, hernia inguino-superficialis perinealis; as they occupy respectively the region of the lower abdominal wall, of the thigh, or of the perineum.

The three principal forms of hernia which escape from the usual route of the inguinal canal and the scrotum are: properitoneal, intermuscular and superficial hernia.

I have now collected and studied the histories of thirty-four cases of properitoneal hernia. In

twenty-seven cases the diagnosis was never established until after the death of the patient; in seven cases it was made during life and all of the patients were saved; one without operation and six after operation. This fact alone would justify an attempt to spread the knowledge of this form of hernia.

The history of cases of this sort seems to be that they are, for the most part, originally inguinal herniæ, and often accompanied by an undescended testicle. After occupying the inguinal canal for a certain time, the obstruction offered by the incarcerated testicle, or sometimes by a truss, forces the protrusion, under a strain, out of the canal and into the loose tissue between the peritoneum and the muscles, or between the muscles themselves, or between the whole mass of muscles and the skin and superficial fascia. They usually occupy a position above and parallel to Poupart's ligament, and simulate an encysted hydrocele of the spermatic cord. They are sometimes so large that they overlap Poupart's ligament and hang down over the thigh. Prof. S. D. Gross has recorded a case of this sort. They often extend upward and outward as far as the anterior superior spine of the ilium. On investigation they can often be grasped in the hand through the abdominal wall and felt as distinct and movable tumors.

The treatment of properitoneal hernia is usually by a cutting operation. I have found the record of only one case which was successfully treated by taxis; and my investigations lead me to the belief that this is the most dangerous way to treat it. The most natural plan is to make a free incision, similar to that for incarcerated inguinal hernia, and to follow this up with whatever dissection is necessary to restore the bowel to the cavity of the abdomen.

Probably the best method of operating would be to make an incision through the linea alba, as if for a laparotomy, and to draw the intestine back from the hernial sac, instead of pushing it back as in the usual operation of herniotomy. By this means there ought to be no danger of a reduction *en masse*, which is the most dangerous thing which can happen in such operations.

For further information in regard to this whole subject I cannot do better than to refer you to the writings of Streubel, Krönlein, Trendelenberg and Küster, of which—with others—I have given a list in a paper published in the *Medical News*, January 22, 1887, and to the excellent paper by Drs. Hartley and Torrey to which I have referred above.

4101 Walnut St.

DR. LONG, U. S. Marine-Hosp. Service, said that he had operated for radical cure twenty-four times in cases of reducible hernia, with two failures to cure. There had been no fatalities or even apparent danger to life. He had had some experience that might interest the members of the

Section. In one of his cases he had operated and discharged the patient two months subsequently apparently cured. This patient was readmitted to hospital eight months after with pneumonia and died. The speaker made a careful dissection of the hernia after the death of the patient. The operation had been a modified Czerny's in which the stump had been sewed up between the pillars of the ring, hoping to secure union and have the stump act as a plug. He found on dissection that there was union between the pillars throughout the length of the opening, but no sign of the stump enclosed. On the inside he found a small cone-shaped (with the top of the cone cut off) portion of the peritoneum resting against the inner surface of the ring. The top of the section of cone was nearly $\frac{1}{4}$ of an inch thick, and certainly of itself offered considerable resistance. Dr. Long thought favorably of McBurney's operation and did not think, in the light of experience, that sewing the stump of the amputated sac in the ring was of any advantage whatever. In his twenty-third case he met with a condition of things that was peculiar. There was no superfluous fat and the sac was easily reached, but the adhesions between it and the tunica vaginalis were so intimate that it seemed impossible to separate them. During the operation he unwittingly opened the cavity of the tunica vaginalis, and subsequently opened the sac, thinking by inserting his finger he could more easily effect a separation. This was found impossible, and the wound in the sac was closed and the mass returned, and the pillars closed. The external wound was left open, hoping to reinforce the parts by cicatricial tissue. He hoped for a good result in this case in spite of the difficulties. As to the matter of particular operations, choice of sutures and kind of stitches, they were matters to be relegated to the choice, fancy or experience of the operator. The speaker said that he had experimented with varieties of catgut. He formerly used the catgut preserved in juniper oil because of its great pliability, but found that it would undergo solution in from four to six days, while that prepared with chromic acid, No. 3 size, will hold for from twelve to eighteen days before undergoing solution, and by that time we will have accomplished all that may be expected from sutures. There is no question as to the advisability of curing hernia by surgical measures.

PAINFUL MUSCULAR SPASMS AFTER FRACTURE PERFECTLY CONTROLLED BY SULFONAL.

BY EDMUND ANDREWS, M.D.,

SENIOR SURGEON OF MERCY HOSPITAL, ETC., CHICAGO.

The ordinary anodynes and antispasmodics do not give us full satisfaction in the muscular

spasms following fractures. It is true that they help somewhat, yet even under the influence of morphine the patient, though quiet when awake, is aroused from his sleep by repeated painful contractions, which continue for days to be a serious source of distress.

In three such cases I have given sulfonal in doses of 15 grs., repeated if necessary, say once in four to six hours. In each case the medicine has stopped the spasmodic twitches completely, giving the patient a wonderful relief. If further experience confirms this result, sulfonal will be a great boon to surgeons and to their patients.

There are other varieties of reflex spasm which may perhaps be relieved by the same remedy. For instance, in hip disease, the inflamed head of the femur provokes frequent nocturnal spasms of the adjacent muscles, causing the patient to awake with a scream. Extension apparatus generally controls this, but in many instances an adjuvant is needed for a time, and sulfonal may prove to be as effective for this purpose as it is in fractures.

It is probable that numerous other varieties of reflex spasm may be equally benefited by the remedy, so that investigations ought to be made in this direction.

No. 6 Sixteenth St., Chicago.

MEDICAL PROGRESS.

CHLOROFORM ACCIDENTS.—Apropos of a recent discussion in the Paris Académie de Médecine, PROF. DASTRE classifies the causes of fatal accidents resulting from the administration of chloroform as follows: Primary syncope, respiratory or cardiac; secondary syncope; toxic apnoea. In the first class death results from the first inhalations (initial shock); this occurs from reflex cardiac syncope in nervous, impressionable individuals weakened by suppuration or hæmorrhages, or in individuals otherwise healthy who suffer from irregularity of the heart's action (in animals with those which exhibit habitual cardiac irregularity, as the dog), or they arise from reflex apnoea under analogous conditions. In the second class (secondary or bulbar syncope) narcotism is more advanced; the heart's action may be arrested suddenly or gradually; the arrest of respiration may be slow and progressive or sudden from tetanic spasm of the glottis. The third class of cases comprises those of fatal intoxication in which the agent has been administered too freely or for too long a time, and the anatomical elements, particularly the nerve elements, have lost their vitality. In this form of chloroform poisoning there is a destruction of mechanism which seems to involve derangement of the entire respiratory apparatus.

The real danger in the administration of chlo-

roform is from the effects produced upon the heart and not from those upon the respiratory organs. In the case of heart failure we are practically without resource, while in the case of respiratory insufficiency we have a remedy in artificial respiration. In opposition to the generally accepted opinion, the arrest of the heart's action is a phenomenon of excitation and not of paralysis or paresis. This is true of at least four out of five cases.

As a remedy for chloroform intoxication Prof. Dastre proposes a mixed form of chloroform administration. Inasmuch as in the majority of cases it is the stimulation of the inhibitory cardiac apparatus that is concerned, section of the two vagi nerves would constitute the theoretical remedy. This being inadmissible, we have still a practical and delicate means of arriving at the same result, *i. e.*, the administration of atropin. This is really equivalent to section of the vagus, which destroys the excitability of the cardiac filaments as well as their bulbar nucleus. Atropin, however, should not be employed alone on account of its excitative tendencies, which may be obviated by the concomitant administration of its antidote, morphine. The action of the combination of atropin, morphine and chloroform has been experimentally tested in the case of dogs. The dog is infinitely more subject to chloroform accidents than is man. In the laboratory of Sorbonne one dog in three was lost by accident. During the last ten years all the dogs have been anaesthetized by the mixed method, and in hundreds of cases of narcosis there has not been a single death. The mode of procedure is as follows: Ten minutes before the operation a subcutaneous injection is made of a solution containing 2 centigrams of muriate of morphia and 2 milligrams of sulphate of atropia per cubic centimetre. Of this half a cubic centimetre per kilogram of the animal's weight is used. The administration of chloroform is then begun, 2 or 3 grams being sufficient to produce a perfect anaesthesia lasting two hours—a much less quantity than would otherwise be required, while the economy in its use greatly diminishes the danger of fatal results. This mixed method has also been used in human surgery, particularly by M. Aubert and his surgical colleagues of Lyons, who employ the following formula: An injection is made from fifteen to thirty minutes before the operation of 1½ cubic centimetre of the following solution:

Muriate of morphia	10 centigr.
Sulphate of atropia	5 milligr.
Distilled water.	10 grams.

M. Aubert gave an account of his experience with the method (Soc. Biol., April 21, 1883) in these terms: "I know of nothing more desirable or practicable. The advantages are the following: 1, safety; 2, the great rapidity with which sleep

is produced; 3, the absolute repose of the patient; 4, the quick return of consciousness; 5, the absence of unpleasant sequelæ such as vomiting. Some of my colleagues have at my suggestion employed the method, and M. Gayet particularly recommends it in ophthalmological surgery." The number of instances of its employment now mounts up (1887) into the thousands, and without the occurrence of a single accident.—*La Semaine Médicale*, August 28, 1889.

THE TREATMENT OF OZÆNA WITH GLYCERINE.—At a recent meeting of the Society of Military Surgeons in Vienna, DR. SIDLO strongly recommended the treatment of ozæna with glycerine. His method consists in daily washing out the nasal cavity with a 2 per cent. solution of chloride of potassium, to which 10 per cent. of glycerine has been added. This is followed up with the insertion of rolls of cotton soaked in a mixture of one part of glycerine and three parts of water, the tampons being allowed to remain in place for an hour at a time. Using this method, he claims good success in the management of ozæna. The method requires some weeks to effect a cure; but no one who has treated ozæna often will think a few weeks too long to devote to any method which is likely to be successful. The one proposed by Dr. Sidlo is so simple, and apparently so rational, that it certainly seems worthy of further trial, and if other medical men can cure such cases as he has cured in this way, it will be a very useful addition to our therapeutic resources.—*Medical and Surgical Reporter*.

ANTIPYRIN IN DIABETES.—DRS. GLEY and GERMAIN SÉE report a number of cases of artificial glycosuria in dogs, in which the good effects of antipyrin in this affection were well illustrated. To a dog passing 13 grams of sugar a day, one gram of antipyrin per diem was given for eight days, at the end of which time the amount of sugar had fallen to eleven grams. At another time the quantity of sugar was reduced by the same means from about ten to less than six grams. Dr. Sée has also employed the drug in the treatment of glycosuria in the human subject with good results. Lépine and Porteret have shown that antipyrin has the effect of retarding the transformation of glycogen in the liver and muscles into glucose. M. Huchard has previously related several cases of polyuria and glycosuria, in which the exhibition of antipyrin was followed by good results. The latter author believes that this drug has a special utility in bulbar neurosis, among which he classes diabetes, polyuria and exophthalmic goitre.—*Revue Générale de Clinique et de Thérapeutique*.—*The Medical Record*.

FOR THE RELIEF OF CORYZA.—DR. KÖHLER

recommends inhalations of camphor as affording great relief in the early stages of an acute coryza. He puts one teaspoonful of powdered camphor in a rather deep vessel, half fills the latter with boiling water, and covers it with a paper cone. The end of this cone is torn of so as to just fit the nose. The warm camphor-laden vapor is then inhaled through the nose, not the mouth, for a period of from ten to fifteen minutes. This procedure is repeated every four or five hours. After the third inhalation, even the most stubborn catarrh, says Dr. Köhler, will be found to have completely disappeared. Any laryngeal catarrh, which may be present at the same time, will be found to be considerably benefited by the action of the camphor vapor.—*Zeitschrift für Therapie*.—*The Medical Record*.

URETHRAL VEGETATION REMOVED BY THE AID OF THE ENDOSCOPE.—DR. F. R. EVERSOLE, of St. Louis, reports a case in which, by the aid of the endoscope, he diagnosed the presence of a venereal growth in the urethra, four inches from the meatus, and successfully removed it with the curette. The application of a 10 per cent. solution of cocaine was useful in checking the hæmorrhage. He also finds the endoscope useful in cases where there is great difficulty in passing bougies through tight strictures. The use of cocaine makes the introduction of the endoscope comparatively painless.—*St. Louis Polyclinic*, August, 1889.

ATROPHY OF THE OPTIC NERVE.—DR. WIGLESWORTH finds that optic nerve atrophy is frequently met with in general paralysis usually as a late symptom, though it sometimes occurs early. He narrates a case in which the optic atrophy was the first sign of the disease preceding by some time the mental symptoms. Dr. Percy Smith and Dr. Yellowlees cite similar cases.—*Brit. Med. Jour.*, Sept. 21, 1889.

SUSPENSION TREATMENT.—DR. A. B. SHAW, of St. Louis, gives the results obtained in three cases by this method. The treatment extended over a period of about eight weeks, with sésances every two to four days. The tractile force used, as measured in pounds by a spring balance, varied from 50 to 128. Two cases of tabes dorsalis and one of cerebro-spinal sclerosis were treated; the patients were all aged, respectively, 32, 66 and 47 years. The results obtained were extremely satisfactory in all instances.—*Weekly Medical Review*, Aug. 31, 1889.

DIGITALIS IN PNEUMONIA.—M. PETRESCU, of Bucharest, claims that pneumonia can be aborted in its early stages by giving large doses of digitalis, *v.g.*, 4 to 8 grams of the leaves in infusion daily.

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PUERPERAL ECLAMPSIA.

Of late, much affectation of unbelief in the so-called urinæmic origin of the very large majority of cases of puerperal eclampsia has crept insidiously into the literature of the subject. This fact is particularly apparent in recent American contributions. For example, in the second volume of the *American System of Obstetrics*, PARVIN gives a most confused account of the causation of this disorder, while HIRST, the editor of the *System*, asserts that "very little is known about the etiology of the disease." We have ventured to characterize this agnostic state of mind as an affectation, since these and all other authorities base the entire prophylaxis and very much of the therapy upon the notion that in the very large majority of cases, eclampsia is the expression of a toxæmia, conditioned upon functional or organic disease of the kidneys, or upon the obstruction to the flow of urine through the ureters. Thus all authorities urge the qualitative and quantitative examination of the urine in every case of pregnancy. In event of pathological albuminuria, or in case of any other significant alteration in the quality or quantity of the urine, the mandatory indications for preventive treatment are fulfilled only by the rigorous restriction of diet to milk, the systematic use of the hot water bath, and the prompt induction of premature labor when other means fail to relieve the symptoms. All these preventive measures indicate a practical faith in the theory of renal inadequacy that belies the confession of ignorance just mentioned.

It has been well said that it is an anachronism to doubt the identity of puerperal fever with the infectious wound-diseases. The same remark is applicable to unbelief in the doctrine of the renal origin of puerperal eclampsia in the very large majority of cases. For CARL BRAUN (1857) demonstrated the dominant influence, as a causal factor, of acute renal inadequacy, while HARBERTSMA (1871) has shown the occasional etiological significance of obstruction to the flow of urine through the ureters. These teachings to-day rest on evidence, cumulative from observation and experiment, that is conclusive, and that in kind and degree closely resembles the proof of the Semmelweis theory of puerperal fever.

The idea conceived by the individual practitioner as to the causation of puerperal convulsions is of the utmost moment to his patient, since upon this conception must depend all treatment, preventive and curative. Under all these conditions, has one the right to "count it a bondage to fix a belief," or to affect "free will in thinking?"

Doubtless some of the confusion on the subject is due to the use of the term eclampsia as indicative of a disease, and not merely as the name of a symptom. Perhaps it would be better to designate the condition in the concrete case more exactly by speaking of the eclampsia of Bright's disease, of urinary absorption, of acute yellow atrophy of the liver, and the like. Then, too, it is absolutely necessary to exclude from the notion of puerperal eclampsia, and to eliminate from the record of cases, convulsions due to epilepsy, hysteria, tetanus, meningitis, cerebral tumors, acute anæmia, and the like. Convulsions owing to such causes obviously have no relation to the morbid state under discussion.

As before remarked, the Braun-Halbertsma doctrine of eclampsia does not include *all* cases, although it is adequately explanatory of *nearly* all cases. The urinæmic theory, as presented above, is not an universal proposition.

STUMPF (1886) succeeded in the demonstration of aceton in the distilled urine of a few eclampics, and of sugar in the urine of a few others. He is of the opinion that, under abnormal decomposition processes, there is released a nitrogen-free, toxic substance—possibly aceton or an allied body with the same reactions—which, during excretion, irritates the kidneys to the point of nephritis, destroys the coloring matter of the

blood, alters the activity of the liver cells, causes the presence of sugar, the destruction of the hepatic parenchyma to the degree of acute yellow atrophy with the production of tyrosin and leucin, and finally, by irritation of the encephalon, determines coma and convulsions (Winckel). What may be the cause of these abnormal decomposition processes, whether it be an agent of infection, exogenous in origin, or whether it arise within the body of the fœtus, Stumpf does not pretend to say. In this connection the cases of eclampsia associated with hæmorrhagic hepatitis, very lately reported by GUSTAV BRAUN, are of extraordinary interest. There are not lacking those that regard many forms of the nephritis of pregnancy as the expression of infection. They seek to explain in this way the remarkable cases of Stumpf and Gustav Braun. It has been asserted that microorganisms may enter the body through the atrium of the intestinal tract, circulate in the blood, determine destruction of tissue and capillary embolism in the kidneys, liver and other viscera, or produce toxic effects through their leucomaines. In passing it may be remarked that these observers allow bacteria to play a closely similar rôle in nephritis as it occurs in men and non-gravid women. For the present, however, the cases are too few in number and the facts altogether too meager to admit of generalization. But enough has been learned to stimulate research, to necessitate more exact anatomical diagnosis, to compel more thorough chemical examination of the fluids of the living and of the dead body, and, finally, the claims of the bacteriologist demand closest attention.

PHYSIOLOGICAL DIFFICULTIES AT THE CLARK UNIVERSITY.

From the *Worcester Gazette* we learn that the curators of the Clark University have encountered unforeseen difficulties in the way of obtaining physiological and other trained teachers from German universities. The curators had desired to secure certain young Germans, highly trained according to the modern methods, who would be willing for a limited number of years to teach at the new university, in the expectation that the way would be left open for these men to return to their home university without detriment to their future at the institution of their choice.

There was no paucity of such young professors who were willing to come to America temporarily to teach at Worcester and other places, but the governing powers at their universities, as a rule, declined to look favorably upon such temporary absences. They have declined to grant any such furloughs. A few of those German instructors may come over, but it will be virtual to an expatriation or exmatriation from their home institutions.

It would seem reasonable, from our American point of view, to expect that some German university would seize upon the opportunity as an opening for the extension of its influence, as if invited to establish a colonial graft of the higher methods of learning, but no, they are content in themselves, and have nothing to spare to others at a distance. It would seem as if the liberalizing tendencies of the present day had stopped short at the gates of the universities. But the American skirts are not clear, and it will not comport with the existing conditions of our statute books to proffer too much criticism. Our laws have not been so framed that we can promise the warmest kind of welcome to educators who may decide to come to our shores. For who can promise the latter that they will not have to run the gauntlet of the alien-labor contract law? It is a hard saying, but a fact, nevertheless, that here are two of the most advanced of modern nations, conspiring together, for differing ends of policy or politics, to put a stumbling-block in the way of the diffusion of an advanced education. These policies of government are wrong and cannot persist; for if there be no common ground between nations in a question of education, there should be no comity in any relation. Of all the people on the face of the globe who should have a free passport to come and go at their good pleasure, the scholarly teacher and the teachable scholar are the ones who should be favored. They, together with the scientific explorer, should be accorded the fullest international liberty and every degree of welcome. This experience of disappointment at the Clark University merits the profession's attention, for the reason that medicine has much to expect from the preparations that have there been made for the development of physiological and psychological studies to an extent that has not been reached at any other institution in this country.

In the interest of profound medical research, it is to be hoped that this disappointment of the curators will be only temporary.

THE RUSH MONUMENT.

Our readers will find in the present number of *THE JOURNAL*, under the head of "Domestic Correspondence," a letter from SECRETARY ATKINSON calling the attention of the Secretaries of the various medical societies in the United States to the Resolution adopted by the Association at its last annual meeting at Newport.

We sincerely hope that every society will regard that communication as a personal appeal, and that at once and everywhere efficient action will be taken to secure at an early day the accomplishment of the desired result. Let the officers of every medical organization interest themselves in this matter, and be sure that their individual work is well done.

Among the benefactors of mankind whose deeds are worthy of special remembrance there are none more conspicuous than are found in the medical profession, and among the names of medical men, there is no one which we more delight to honor than the name of BENJAMIN RUSH.

EDITORIAL NOTES.

HOME.

THE DETROIT ACADEMY OF MEDICINE.—The following were elected officers for the ensuing year at the annual meeting held last month: President, Dr. Henry A. Cleland; Vice-President, Dr. F. C. Heath; Secretary, Dr. Wm. B. Sprague; Treasurer, Dr. W. J. Cree.

THE PRICE OF QUININE has again fallen and, consequently, the large holders thereof are suffering from an attack closely approximating ague.

DR. D. D. RICHARDSON, of Philadelphia, has been elected Superintendent of the Diamond State Insane Asylum, Farnhurst, Del.

THE MEETING OF THE AMERICAN ACADEMY OF MEDICINE.—The annual meeting of this medical organization, of which Dr. Leartus Connor is President and Dr. R. J. Dunglison is Secretary, will convene in Chicago on November 13th and 14th. The academy is composed of men who have been graduated from literary colleges, and it has for one of its purposes the securing of like

preliminary education by students previous to their entrance upon the study of medicine. From the well-known ability of its active members and the number of valuable papers to be presented, we may confidently anticipate a most interesting meeting.

DR. THOMAS A. DAVIE, surgeon for the Northern Pacific Railroad Company, died recently at Tacoma of typhoid fever.

CALIFORNIA STATE MEDICAL SOCIETY.—*The Pacific Medical Journal* says: It will be remembered that at the last meeting of the State Medical Society it was enacted that one qualification necessary for membership should be continuous membership in the regular local medical society. This action has been widely discussed and most favorably commented upon by the Eastern medical press. It is looked upon as a capital method for cementing the profession, binding together the various medical organizations and encouraging them to work in harmony and effectually.

WHAT WILL YOU DO?—The next three months afford a favorable opportunity to enlarge the subscription list of *THE JOURNAL*. It is within the power of each of our readers to secure one new subscriber. Every member of the American Medical Association is a stockholder in *THE JOURNAL* and, as such, should use every effort to increase its circulation and influence. To those who will get up clubs we will make special terms. Will each of our readers write us, sending a list of physicians to whom sample copies should be sent? Be in earnest in this matter. The larger subscription list we can obtain before the close of the year, the better *Journal* we can give you for 1890. What will *you* do?

SPECIAL NOTICE.—The American Academy of Medicine is endeavoring to make as complete a list as possible of the Alumni of Literary Colleges in the United States and Canada, who have received the degree of M.D. All recipients of both degrees, literary and medical, are requested to forward their names at once to Dr. R. J. Dunglison, Secretary, 814 N. 16th street, Philadelphia, Pa.

THE AMERICAN RHINOLOGICAL ASSOCIATION closed its seventh annual session at Chicago last week. The new officers elected are; President, Dr. A. G. Hobbs, Atlanta, Ga.; First Vice-Presi-

dent, Dr. A. B. Thrasher, Cincinnati; Second Vice-President, Dr. E. R. Lewis, Indianapolis; Secretary and Treasurer, Dr. R. S. Knode, Omaha; Librarian, Dr. John North, Toledo; Member of Council, Dr. C. H. von Klein, Dayton, O.

FOREIGN.

THE great amphitheatre of the School of Medicine at Paris was destroyed by fire last week.

DR. LAUDER BRUNTON will pay a visit to India to test the results of the Hyderabad Chloroform Commission.

THE GERMAN DERMATOLOGICAL SOCIETY will hold its next annual meeting at Berlin in connection with the International Medical Congress.

DR. KARL FRANKEL will fill the new chair of Hygiene and Bacteriology in the University of Königsberg.

QUEEN'S COLLEGE, BIRMINGHAM.—A new theatre has been recently fitted up for lectures on medicine, etc., the former medical school being now reserved for anatomy.

AN ANTI-VACCINATION CONGRESS was recently held in Paris. The President, M. Boeus, a Belgian, stated that small-pox is not so fatal as is believed, also that the use of candles, instead of gas or lamps, which give a strong light, prevents small-pox patients from being marked.

THE DEPOPULATION OF FRANCE is causing the French legislators a great deal of anxiety. A correspondent of the *British Medical Journal* suggests that it would be wise to move for a strict inquiry into French baby-farming, and adopt energetic measures to prevent the loss of infant life attending this system.

THE ADMISSION OF WOMEN TO THE BELFAST MEDICAL SCHOOL.—The *British Medical Journal* says: An application was recently made by three young ladies to the medical professors of the Queen's College, Belfast, to have the medical classes thrown open to women. The Arts classes of the College were opened to women some years ago with results in every way satisfactory, and we understand that the above application has been favorably entertained by the medical professors. The next question will be the opening to women of the medical practice of the various hospitals, especially the chief teaching institution in Belfast, the Royal Hospital. It is believed, however, that

no difficulty is likely to arise on this side. Experience has shown that young men and young women can be taught conjointly at the bedside without inconvenience.

CHOLERA IN ASIATIC TURKEY.—Bagdad and Bussorah have, according to a correspondent of the *London Times*, been visited by an epidemic of cholera. The disease was first noticed in obscure inland spots, whence it spread to the port of Bussorah, near the head of the Gulf of Persia. From the first, the Ottoman Government left nothing undone in the way of quarantine to prevent it spreading up the Tigris, but all efforts proved unavailing. At Bagdad a severe outbreak has occurred, many dying daily; in the absence of systematic registration, it is impossible to say how many.

NATIVE WOMEN IN THE MEDICAL SCHOOLS OF INDIA.—The *Provincial Medical Journal* says: At the present moment there are some 200 native women studying medicine in the medical schools at Bombay, Calcutta, Lahore, Madras, Hyderabad and Agra, which is the last one to open a class to the sex. Some will take Indian University degrees, some will come here, or go to the Continental or the American schools, to carry their education as far as possible, though the majority will never proceed further with their studies than to be classified as "hospital assistants." At the outset of the movement it was difficult to find Indian girls sufficiently bold to break through the traditions of centuries, and come forward to adopt the profession; but now there is almost an *embarras du choix*, and rigid supervision is exercised in the selection of those only who are intellectually and physically equal to the training. The National Association now has eleven fully qualified lady doctors practicing in various parts, and of these five were trained in England and six in India. It now only permits ladies to designate themselves "doctors" if their education has been sufficient to permit them to be registered under the Medical Acts in force here, and gives to less highly qualified women the titles of "Female Assistant Surgeon," or "Female Hospital Assistant." It is pleasant testimony to hear that the strictly "unsectarian" scope of the National Association did not prevent ladies of the various medical and Zenana missions from giving it all the help and counsel in their power.

TOPICS OF THE WEEK.

THE LATE SESSION OF THE NEW YORK STATE MEDICAL ASSOCIATION.

Under the above heading we quote an editorial from the *Medical Record* of October 5, as follows :

The recent session of this Association was characterized by an exceptionally large attendance, and much manifest interest in the proceedings. The topics discussed made a home-like appeal to the general practitioner, whose zeal is in the direction of the "first care;" they were practical, well selected, exhaustive and scholarly. Many new men, destined to make their mark, surprised both themselves and others with the applause gained by their ambitious endeavors and the results of their work. There were some disappointments, owing to the failure of a rather crowded programme and the absence of certain advertised participants, but, on the whole, these drawbacks were more than compensated for by the eagerness of volunteers to fill the gaps, so that there was no real dearth of substantial material.

The set discussions on the collective-investigation plan, which seem to have come to grief across the ocean, were both satisfactory and successful. The themes selected, such as "Tubal Pregnancy," the "Treatment of Hernia," and the "New Hypnotics," were timely and well treated. We may say, in fact, that they were exceedingly well handled, and so far as the detailed questions were concerned, assigned to those who were able to speak by authority. There were very little crudities of thought or looseness of statement, but, on the contrary, much honesty of investigation, some skeptical interrogation, and a deal of logical candor.

Much as we have deplored the Code schism, we are fain to acknowledge that, when families become too large, the component individuals may gain in energy and benefaction by separating for the purpose of house-keeping on their own account; at all events, in the present instance, sympathy appears to drift somewhat toward the young couple, especially when zeal and honest endeavor go hand in hand. Certainly, if the Association aim for influence and additions to our stock of knowledge, not only the profession but the public at large cannot fail to be benefited—the field is large, the harvest ripe, and the laborers none too many.

THE HISTORY OF ORTHOPEDIC SURGERY IN AMERICA.

From the very able and interesting address of the President, DR. E. H. BRADFORD, delivered in Boston, September 17, 1889, at the third annual meeting of the American Orthopedic Association, and reported in the *Boston Medical and Surgical Journal*, we present the following :

The history of orthopedic surgery in America can never be thoroughly written, as the earlier facilities for presenting cases and recording methods were necessarily imperfect in a new country. The earlier American bibliography, prior to 1860, which, through the kindness of Dr. Billings, has been copied for me from the catalogue

of the Army Medical Library, shows not only much that is of interest, but indicates by what is implied as much as by what is published, that much excellent work was done which escapes the annalist.

The first triumph in orthopedic surgery in America is the classical operation by Rhea Barton (*North American Medical and Surgical Journal*, 1827, p. 279), the founder of osteotomy for correction of deformity, as McDowell is the founder of ovariectomy.

Physick's Fixation Hip Splint, described in 1831; Chase's paper on the "Treatment of Club Foot Without Tenotomy" (*American Journal of Medical Sciences*), 1841; Mütter's work on "Club Foot" in 1845—all indicate the intelligent interest taken in the subject. Excision of the hip was first performed in this country by Dr. Wilcox, of Eastern Pennsylvania, as early as 1849.

The stimulus of Stromeyer's achievements was quickly felt in America, and tenotomies were done by Rogers (1834), Dickson (1835) and Detmold (1837). To the latter belongs the credit of the first published tenotomy, the tenotomies of the two former surgeons not having been recorded. Detmold also acted *ex cathedra*, as it were, for he was fresh from the teachings of Stromeyer. The interest taken by general surgeons of the time in orthopedic surgery is indicated by the remarks of Valentine Mott, as quoted by Mütter, of Philadelphia, and by the well-known work on "Orthopedic Surgery," by Dr. Henry J. Bigelow, published in 1845, and which to-day is a model of excellence, and one of the best of publications to illustrate the French school of orthopedic surgery, the dominant school of the time. . . . Speaking of the history of orthopedic surgery in New England he says :

Dr. Buckminster Brown has been kind enough to write for me the following outline of the history of orthopedic surgery in New England, which I quote in full :

"The history of orthopedic surgery in New England commenced in 1838, when Dr. John Ball Brown, of Boston, treated nine cases of spinal disease and curvature. Dr. Brown was for several years associate surgeon with Dr. John C. Warren, and afterwards consulting surgeon at the Massachusetts General Hospital. For some years previous to the above date he had given much attention to this class of complaints. In 1839 Dr. Brown received from Paris a copy of a publication of M. Bouvier, in which he describes the operation for the section of tendons in club foot devised by Delpech, together with the introduction by Stromeyer of subcutaneous tenotomy, his own (M. Bouvier's) modification of this method. He also received at the same time the apparatus employed in the after-treatment. Dr. Brown at once decided to perform this operation and to pursue the method of treatment described.

"On February 21, 1839, he did the operation on a little girl 4 or 5 years of age, who had talipes varus. The treatment was successful. So far as was known to Dr. Brown, this was the first time that subcutaneous tenotomy had been done in America. He afterwards learned it had been done once previously by Dr. Detmold, of New York. Dr. W. J. Little, of London, about this time published his first work on "Club Foot and Analogous

Distortions," and this was a great assistance to the American pioneer.

"The various French treatises on this and kindred subjects by Guérin, Bouvier, Chassignac and others were also welcome aid during the earlier years. He imported from Europe various instruments and drawings of apparatus, invented many and modified others.

"From the date above named Dr. Brown had an extensive experience in this branch of surgery, and his reputation spread widely. Patients, not only from the neighboring States, but from the South and from the West, and even from the Sandwich Islands, journeyed to Boston for the purpose of being placed under his care. In 1849 he opened, in a house hired for the purpose, a small hospital for the treatment of orthopedic cases. Dr. Brown continued in the practice of orthopedic surgery until his death, which occurred in 1862.

"Dr. Brown's treatment of talipes was essentially modelled on that of Little and Bouvier. In lateral curvature he adopted, to a certain extent, the course pursued by Jules Guérin, with modifications and improvements of his own; and in spinal caries fixation was the point aimed at.

"In 1846 Dr. Buckminster Brown returned from Europe, where he had followed the practice of Little, Stromeyer, Guérin and others. He immediately commenced practice in his profession, at first combining the orthopedic branch with general practice, and finally confining himself to the former. From this date to the present, he has from time to time published some of the results obtained from his practice and experience.

"In 1861 Dr. Buckminster Brown took charge of a ward in the Samaritan Hospital, for treatment of deformities."

The Children's Hospital in Boston, opened in 1866, though not an orthopedic institution, necessarily demanded treatment for cases of this sort, and has developed in this direction to such an extent that its orthopedic clinic may be said to be one of its most prominent features.

The increase of interest in this branch of surgery is marked in a practical way by the foundation of special hospitals. On May 1, 1863, the Hospital for Ruptured and Crippled, of New York, was opened by Dr. Knight, and is now one of the largest hospitals of its kind in existence. In 1866, an Orthopedic Dispensary was opened in New York, by Dr. C. F. Taylor. In 1873 it was enlarged into a hospital. Dr. C. F. Taylor was appointed consulting physician, in 1868, to St. Luke's Hospital, and in 1872, Dr. Shaffer was appointed visiting consulting surgeon there. The interest in the treatment of deformities by Dr. J. K. Mitchell, of Philadelphia, was active, and led to the establishment of an orthopedic hospital in that city.

LOCAL, MEDICAL SOCIETIES.

We transcribe from the *Atlanta Medical and Surgical Journal* for October the following editorial:

With the advent of cooler weather, the time has arrived when medical societies all over the land are buckling on the armor and preparing for their winter's work.

The hot months, relaxing alike to the mental and physical energies, have caused a cessation of society work for a time. But now that the profession is settling down once more to its regular labors, the demands of the local medical societies upon the recognition and attention of the medical man should not pass unheeded. It is to be regretted that the advantages of such associations for united professional work are not more fully recognized, or if recognized, that such recognition is not more universally translated into practice. That medical societies are the most potent instrumentalities for the advancement of medical science is a fact that cannot be gainsaid by any observant man. A moment's thought will convince any one that the best results that are obtained in this direction are almost invariably wrought out under the stimulating influence of the contact of mind with mind. The practitioner is thereby lifted out of the ruts into which every one is so liable to fall when working by himself alone, and he learns that there are other works of practice and other lines of thought outside of those to which he has become accustomed. The tendency of society work is to broaden a man's views of medical matters, to enlarge his field of vision, and thereby to make his daily practice more satisfactory to himself and more beneficial to his patients.

These are facts which are too patent to admit of argument. Yet there are many men of good standing in the profession who are never seen in the medical society. Why this should be so it is difficult to understand. It is true that the arduous duties of a large practice leave but little leisure for anything else; yet the men who have large practices are the very ones who will derive the most benefit to themselves by occasionally stepping aside from the practical application of their wide experience to compare their views with those of other men, and to avoid thereby the tendency to routine which is inseparable from unremitting professional toil. Moreover, the social element which always enters to a greater or lesser extent into all societies is promotive of a friendly professional feeling and a proper *esprit de corps*, which is apt to drop out of sight altogether when every man is working on his own independent schedule.

To the younger portion of the profession the value of the medical society cannot be overestimated. There he has the opportunity to avail himself of the experience of older and wiser men and to learn lessons in practice which cannot be learned from the generalizations of his text-books. Next to actual individual experience there is no school so valuable to the young practitioner as the medical society.

We would therefore urge upon our readers the desirability of the formation and support of organizations of this kind. In thinly settled districts two or more counties might advantageously unite and hold monthly meetings at some accessible point. In the cities and larger towns where societies already exist we would urge a more general membership and a more frequent attendance of meetings. The result of such a course would soon be felt in an elevation of the tone of the profession, a promotion of scientific and accurate medical knowledge, and a better ethical spirit everywhere. Petty jealousies and animosities would disappear, knowledge of medical science would be promoted, and the profession would be brought nearer to that plane which we all recognize as alone worthy of a noble and lofty calling.

PRACTICAL NOTES.

SALICYLIC ACID IN MALIGNANT SCARLATINA.

DR. SHAKOWSKI has administered salicylic acid with the greatest success in 125 cases of grave scarlatina occurring in children, the mortality being reduced to $3\frac{1}{2}$ per cent. Ordinarily his method of administration was in the form of a mixture consisting of one part of salicylic acid to seventy-five parts of water and thirty parts of syrup of orange peel, a teaspoonful of this being given every hour during the day and every two hours during the night. He writes that under the influence of this remedy the temperature is rapidly reduced, in certain cases, even at the end of forty-eight hours, the temperature falling four degrees. Habitually all traces of fever disappear after the tenth day of the disease. Nevertheless, the author advises to prolong the treatment for some time longer than this in progressively decreasing doses, so as to avoid any danger of relapse. Through the use of this remedy the author believes that he has avoided the most serious complications of scarlatina, such as uræmia, anasarca and diphtheria. He claims that this medication will only be ineffectual when given too late—that is, after the fourth day of the disease, or when there exists some grave chronic complication.—*Revue mensuel des Mal de l'Enfance*.—*The Therapeutic Analyst*.

SOME OF THE NEW SKIN REMEDIES.

BULKLEY stated in his address as chairman of the Section on Dermatology, at the Newport meeting, that resorcin and ichthyol have not fulfilled the expectations incited by Anno. They are not indifferent, but their use is restricted. The thorough and continuous use of a zinc ointment, containing 20 grs. each of salicylic acid and ichthyol, produces excellent results in infantile eczema. Resorcin is a parasiticide, useful in ringworm, seborrhœic eczema and psoriasis. It is useful in acne (5 per cent. in alcohol and water) to check the oily secretions. Too much is irritating and discolours the epidermis.

Lanolin has but limited uses also. It will not do alone as a basis for ointments; 25 per cent., with other fats, keeps the skin soft and pliable. It has been pushed by the trade, but is little used by dermatologists.

The New York Dermatological Society has taken strong action against making vaseline, cosmoline, etc., the basis of ointments in the coming revision of the Pharmacopœia. They are good for lubricants in scaly skin troubles, and to carry carbolic acid as an antipruritic. Even albolene is too soft for a protective, and Hebra's diachylon ointment is still at the head. Bulkley prefers the unguentum aquæ rosæ—almond oil, spermaceti,

white wax and water—to all others in compounding prescriptions.

Salicylic acid maintains its reputation, and has come to stay; 3 per cent. in hair tonics where there is an oily scalp; 10 to 20 per cent. in alcohol and water as an efficient parasiticide; a drachm each of oxide of zinc and salicylic acid to the oz. of starch, in checking excessive perspiration of the axilla and feet; these are among the uses of salicylic acid.

Anthrabin, in a 10 per cent. ointment, has a marked effect upon psoriasis, without producing inflammation or staining as much as chrysarobin. Alkali baths increase its action.

Ten per cent. naphthol ointment has an increasing reputation in scabies; menthol, in 5 to 15 per cent., with a little alcohol and glycerin, is a most serviceable antipruritic, and takes away the pain of epilation; campho phenique, 1 drachm to the oz. of vaseline, often gives complete rest to an intolerable itching.—*Indiana Medical Journal*.

A SIMPLE METHOD OF TREATING UMBILICAL HERNIA IN INFANTS.

DR. WALTER CHRYSTIE, Physician to the Children's Dispensary, University Hospital, writes to the *Medical News*:

If the treatment of umbilical hernia in the earlier weeks of infant life has proved as troublesome and annoying to others as to the writer, this description of a simple and effective method of treatment will not be out of place.

Agnew and others use a button of cork covered with chamois skin, and held in place by a broad strap of porous or rubber adhesive plaster encircling the trunk. Elastic bands, pads fastened to the binder, hard rubber spring trusses, and various more complicated devices are also recommended. Most of these methods I have used, all with discomfort to the child and unsatisfactory results. Porous plaster invariably irritates the skin, as does rubber adhesive plaster, and their removal causes a paroxysm of crying when the consequent straining is most undesirable. All absorbent pads become malodorous from retained perspiration, and are constantly moist from the daily baths. Bands extending around the waist interfere with respiration, peristalsis, and the development of the abdominal and lumbar muscles. Elastic bands are by far the worst in this respect. Pads fastened to the binder are constantly slipping out of place. The same may be said of trusses, which have the additional disadvantage of hurting a child that is not handled carefully.

An apparatus for successful treatment should be non absorbent, non-irritating, and of such material that it will remain in place for at least a week, notwithstanding daily bathing. It should not interfere with peristalsis, respiration or development, and must be free from the possibility of

hurting a carelessly handled child. Such requisites are combined in the following device, which differs slightly, but in important particulars, from others.

It consists of a hard-rubber, slightly oval, plano-convex lens, with a greater diameter of 3 cm. and thickness of 6 or 7 mm.; on the plane surface are two small wire loops facing each other at a distance of 2 cm. This is attached to the center of an adhesive plaster strap, 2 cm. wide, and long enough to embrace three-fourths of the child's body, by thrusting the wire loop through the plaster and a small safety-pin through the loop. No plaster other than a reliable emplastr. resin. of the Pharmacopœia should be used. In using, the hernia is reduced by the pressure of the button, and the warmed plaster quickly applied while the child is quiet. This will retain its position for from one to three weeks, unless considerable soap is used in the bath. When removal is desired, a few moments' soaking with soap and water will loosen it unnoticed by the child. If redness of the skin is produced, the cause will be found in the adulteration of the plaster with turpentine or Burgundy pitch.

WHITE LEAD IN THE TREATMENT OF ERYSIPELAS.

(By E. STUVER, M.S., M.D., of Rawlins, W. T.)—During the last four or five years I have treated a number of cases of erysipelas with ordinary white lead ground in oil, thinned to a proper consistency with Japan dryer, and so prompt and efficient has been its action that I desire to call attention to its merits.

I have tried quite a number of the most highly lauded remedies, including the combination of sulphichthyolate of ammonium and lanolin, which is claimed by many to be a specific in this disease, but in my hands white lead paint has exerted a more favorable influence than anything else. It very promptly relieves the burning pain and feeling of tension which are so marked in severe cases; it limits the spread of the disease process, and forms an impermeable covering over the affected parts, thereby preventing the dissemination of diseased particles. If this disease, as is now generally admitted, be caused by pathogenic microorganisms, this power of the treatment to limit the spread of the disease germs should lead to its more general adoption.—*Medical News*.

THE INCUBATION PERIOD IN INFECTIOUS DISEASES.

DR. JAMES FINLAYSON (*Glasgow Medical Journal*, May, 1889), in preparing a code for the regulation of the school attendance of children exposed to or affected by infectious diseases, found that there was a decided diversity of opinion among authorities as to duration of the incubation period and as to the time of quarantine for

children that had been exposed. The incubation period in scarlet fever is given as low as 1 day and as high as 14 days, with an average duration of quarantine from 10 to 14 days; measles, from 3 to 17 days—quarantine 16 days; röteln, from 4 to 21 days—quarantine from 16 to 21 days; mumps, from 4 to 24 days—quarantine from 21 to 24 days; whooping-cough, from 4 to 14 days—quarantine from 16 to 21 days; chicken-pox, from 2 to 18 days—quarantine from 18 to 21 days; small-pox, 5 to 19 days—quarantine 16 to 18 days; diphtheria, 1 to 14 days—quarantine 10 to 12 days; enteric fever, 1 to 30 days—quarantine 28 days; typhus fever, 1 to 21 days—quarantine 21 to 28 days; erysipelas, 1 to 13 days—quarantine 10 days. As in the United States local ordinances involving this question require the physician to furnish a certificate to the child, the periods of quarantine above given may serve as precedents.—*New York Medical Journal*.

TO STERILIZE MILK.

It is not necessary (*Dietetic Gaz.*) to invest in a sterilizing apparatus, as any housekeeper can arrange one equally efficient for herself. All that is necessary is to have some bottles, capable of containing the milk to be used in a day; each large enough to contain what will be needed at one time. These bottles and their corks should be thoroughly cleansed by boiling in a solution of washing soda. The corks should be selected, and of the best variety. When the milk is brought to the house it should be placed in these bottles, which should be arranged on a wire frame in a pot of water, and boiled for fifteen minutes. They should then be corked securely and placed in the refrigerator with the ice *upon* them, not under them. In the country they may be lowered into the well. Milk thus treated will not only keep sweet and fresh, but almost any impurity it may originally contain will be rendered innocuous. The flavor of boiled milk is unpleasant to many persons; but this may be remedied by the addition of a little coffee or cocoa. At any rate one must not expect too much in this world, and for the sake of safety put up with the unpleasant taste, or learn to like it.—*The Canada Lancet*.

CASTOR OIL AS A MENSTRUUM FOR COCAINE.

DR. S. MITCHELL writes in the *New York Medical Record* of the happy results following the use of castor oil as a solvent for cocaine. A patient had been attacked with herpes zoster, the eye being much affected. Great pain was felt from the hard cicatrix resulting from the healing of a vesicle. Castor oil was applied as a lubricant, and the doctor then conceived the idea of adding cocaine. A 5 per cent. solution was used, by which the pain was relieved. Recovery was rapid.—*Druggists' Circular*.

SOCIETY PROCEEDINGS.

Medical Society of Virginia.

(Concluded from page 539.)

DR. I. S. STONE, of Lincoln, read a paper giving an account of

SOME GYNECOLOGICAL WORK OF THE PAST YEAR

The author stated that his cases were treated in his private sanatorium, where they could have good surroundings, nursing, etc. Four cases of abdominal section for tumor of the peritoneum with cancer of transverse colon, salpingitis, chronic peritonitis following salpingitis, and one Battey's operation, were respectively reported. The specimens shown (three in number) were characteristic of the disease in question. Other cases of lacerated cervix and perineum were alluded to briefly but not separately reported. The author still advocates Emmet's operation for lacerated cervix, but says he does not so frequently perform it as before. One case of modified hysterorrhaphy was mentioned in which Alexander's operation was done on the left side and a partial hysterorrhaphy on the other. It was ascertained that many minor disorders, not surgical, were to be successfully treated by massage, electricity and over-feeding known as the Weir-Mitchell method. The author has had several years of experience in treating these cases, and justly claims that a very large percentum of cases come under this heading. Electricity was not spoken of at length, but enough was said to show some skepticism in regard to its value in all save in nerve complications.

DR. JOHN W. SCOTT, of Gordonsville, Va., was the reporter on

PRACTICE OF MEDICINE.

After reviewing much of the germ theory as causative of a number of diseases, he concludes that we must look to local sanitary improvements rather than to quarantine alone for the prevention of epidemics, such as Asiatic cholera, yellow fever, etc. Gibier maintains that the bacillus of yellow fever closely resembles that of cholera. During the year ending May 1, 1889, Pasteur treated 1,673 persons bitten presumably by rabid dogs, and lost only three by hydrophobia after the conclusion of the treatment; six died during treatment, and four developed the disease a fortnight after leaving the institution. The microbe of typhoid fever is the bacillus of Eberth and Gaffky. It is of tenacious vitality, and may live for months in decomposing faecal matter, increasing in numbers at a temperature of 62.5° F. Drs. Kalb and Bartlett claim (*Brit. Med. Jour.*, Jan. 5, 1889) what is next to an abortive treatment of typhoid fever by mercurial inunction. This treatment must be commenced before the ninth or

tenth day. Cold baths are being again advocated. Ehrlich's diagnostic sign of enteric fever—reaction in the urine with one of the aniline derivatives—has been verified by Dr. Taylor (*Lancet*, May 4, 1889). Tuberculosis is a specific infectious disease, the constitutional manifestations of which are secondary to the bacilli, and due to toxic influences evolved during their increase of growth and number. The number of the bacilli in the sputa bears no relation to the progress of the disease. The dry sputa is chiefly concerned in the propagation of the disease. The disease can be transmitted only through the medium of Koch's bacillus. It is not in the ordinary sense hereditary. The presence of the bacillus in the sputa is of positive value, but not of negative value in diagnosis. A rational prophylaxis is practicable, and we must still look more to prevention than to cure of tuberculosis, as no non-injurious antiseptic has yet been brought forth successfully. The infectiousness of scarlet fever suddenly decreases about the sixth day and increases again about the twelfth, reaching its maximum by the sixteenth. The telluric origin of tetanus is gaining advocates. The disease may be produced by inoculation with earth which has recently been in contact with organic matter. The treatment of locomotor ataxia by suspension is approved, but with the injunction to be cautious in watching the effect on the patient during the operation of suspension itself. No case of Pott's paralysis ought to be regarded as desperate until after failure of suspension. Weil's disease is due to septic poisoning, and hence it is proposed to call it septic or infectious icterus. Dr. Scott's observations on the treatment of whooping cough by inhalations of the oil of eucalyptus, is beneficial in shortening the length and in ameliorating the severity of the paroxysms, and in prolonging the intervals between the spells. His method was to pour from one to two drachms of the oil on sponges, and suspend several of them during the day from convenient places in the room; at night, from the head of the bed, so as to let the oil be constantly inhaled. A number of abuses of hygienic rules were mentioned, in the hope of getting practitioners to properly instruct their patients with regard to them, such as the common errors in our schools, the aversion of wives to becoming mothers, etc.

DR. A. JACOBI, of New York, read a paper on

ENTERALGIA AND CHRONIC PERITONITIS.

Enteralgia is always an irritation of a branch or branches of the sympathetic nerve. Its cause lies in the nerve or the intestinal tissues or its contents. Hysteria, hypochondria, malaria, gout, poisons, etc., may start the disease; or the pain may be reflected from spinal, liver, genito-urinary or skin disease, sudden chilling of the skin being a frequent cause. The pathological changes are

congestion or inflammation, with their results. Acid food, certain drastics, hard scybalæ, fermenting foods, etc., are the common causes of enteralgia. The attacks are indefinite in length or suddenness. The temperature is rarely raised; the pulse is irregular; the skin becomes cold and clammy; sometimes dysuria, nausea, vomiting, constipation or diarrhœa occur. The tumidity of the abdomen changes its place under palpation, etc. Priapism and seminal discharges may occur with spastic rise of the testicles.

A common cause of enteralgia, often overlooked, is chronic peritonitis of secondary nature. New abdominal formations, peritoneal adhesions, swelled pelvic glands, etc., point to previous peritonitis. Floating kidney may start peritonitis, and thus become fixed in its dislocated position. Vertebral disease, psoas and iliac abscesses, hip-joint abscess, etc., may cause chronic peritonitis, oftentimes not recognized except post-mortem. Catarrhal "female diseases" are frequent causes, as are violent cohabitation, the puerperal state, etc. Biliary calculi, perinephritis, splenic and pancreatic diseases, infantile intussusception, a preceding attack of peritonitis, etc., are also causes. Simple intestinal catarrh grows speedily into enteritis. Peritonitis is likewise communicated to the muscular and mucous tissues, and thus extends the œdematous infiltration, paralysis, and hence constipation. Thus also diarrhœa, intestinal ulceration, without perforation, may cause local peritonitis. Diagnosis of chronic peritonitis is not always easy. Respiration need not be accelerated in pelvic peritonitis, perimetritis and pericystitis. Vomiting is sometimes wanting; diarrhœa is not infrequent, but constipation is the rule; the abdomen may be tumid, and the horizontal position is often uncomfortable. The seat of inflammation or adhesion may sometimes be told by placing the patient on his back, extend and then flex the extremities, and then use pressure, soft hard, sudden and gradual. Often, however, it is best to make deep pressure; if no pain, relieve the pressure suddenly; when localized pain may be felt. Change of position of the bowels may arouse pain; sharp pain, after full meal, may point to adhesions of the stomach; if pain occur three or four hours after eating, look for chronic colitis; if after quickened inspiration, then peri-hepatitis, etc. Variability of pain depends on degree of irritation or congestion. Extensive pelvic peritonitis may not give pain except when waked up by defecation, cohabitation, micturition, etc. In peri-cystitis, when urine is about half voided, and the bladder begins to contract, more efficiently, a localized pain above the pubes, increased by pressure, develops much resembling the spasmodic pain of vesical catarrh. Flatulence, etc., develop enteralgia in chronic peritonitis. Stenosis of the bowel, twisting, adhesions, etc., result, thus in-

terfering with the intestinal functions. In short, the sequelæ of chronic peritonitis are very various. The indications of treatment of enteralgia of chronic peritonitis are determined by its results and symptoms, such as intestinal sluggishness, adhesions, etc. Subacute and acute peritonitis require absolute rest, support for the knees, ice or hot applications according to circumstances, opiates, etc. Some are now recommending large doses of magnesia sulphate and turpentine enemata; but a treatment under which an occasional patient may escape death must not supersede one which has proven to be successful in most cases, and beneficial in all. Localized attacks, mainly in the right hypochondrium, demand local applications; a few leeches occasionally and morphia subcutaneously may be required. Old adhesions, etc., are not amenable to medicines. Great physical exertion, pressure on abdomen, etc., must be avoided. Keep bowels regular. Wear a snug bandage over the whole abdomen for years after the last complaint of pain. Generally this bandage, held down by a perineal band, gives immediate relief. Without the immobility given by it to the sore intestine, he does not expect a case of chronic peritonitis to do well.

DR. JOHN RIDLON, of New York, read a paper on

SOME PRACTICAL POINTS IN THE TREATMENT OF HIP DISEASE, WITH SPECIAL REFERENCE TO THE USE OF THOMAS' SPLINT.

Only the mechanical treatment of hip disease was considered, and that from the points of most interest to the general practitioner of medicine and surgery. The difficulties of obtaining, applying and satisfactorily caring for any of the forms of traction apparatus were pointed out. Plaster of Paris, when applied from ankle to axilla, was considered as a comfortable and satisfactory dressing, but not easy to apply to many cases. Traction in bed by the ordinary Buck's extension and weight and pulley was not to be used except as a temporary expedient. On the other hand, traction after the manner of Howard Marsh was very useful in those cases where traction was indicated, and rest in bed not contra-indicated. Thomas' splint would prove of great service to those who were satisfied to treat tubercular joint disease in any part of its course without traction, to those who were so circumstanced that they could not use traction in their walking cases, and to those who believe that immobilization, and not traction, is chiefly indicated in the management of these cases. The splint can be made by any blacksmith and harness maker, and should not cost more than \$2.50. Splints, patens and wrenches were shown, and their construction, application and management explained. It was urged that the splint should not be considered as essentially a walking splint, but that

it was of more service while the patient was still confined to the recumbent position. With it the patients are not necessarily confined to bed as is the case when Marsh's method is employed. When the involuntary muscular spasm has subsided, patients are allowed to go about on crutches and a high patten. When the disease is believed to be cured, the crutches and patten are dispensed with: after a few months the splint is shortened up so as to allow of motion at the knee, and thus worn for a few months longer.

DR. JOSEPH A. WHITE, of Richmond, Va., presented the

REPORT ON ADVANCES IN OPHTHALMOLOGY, OTOTOLOGY AND LARYNGOLOGY.

He stated that there had been no brilliant discovery and no new field of research opened up in this line of work, while much had been done in a quiet way to advance the diagnosis and treatment of these special diseases. In ophthalmology, the discussion on *iridectomy in cataract extraction* would fill volumes—the tendency of most writings being a return to the “simple extraction.” In the opinion of the reporter, both simple extraction and extraction with an iridectomy have their application, and a surgeon cannot confine himself to either. The after-treatment has also been modified, and some writers even go so far as to dispense with the commonest rules of conservative surgery, allowing the person operated on to walk about as usual, with the unprotected eye open and the other closed by a piece of plaster. The reporter thought prudence would suggest the same rest, quiet and surgical precautions against failure, as in other surgical procedures. In *detached retina*, Prof. Schoeler, of Berlin, has reported cures from injections of tincture of iodine, into the vitreous and sac, but as yet, no method of treatment has proved satisfactory. *Transplantation of the cornea* has been an experimental operation only, and with the exception of one case of Von Hiepel's, which was a partial success, all the attempts have proved failures, and even the so called successful ones. In defects of the ocular muscles, with or without refractive errors, headache, eyeache, etc., can be relieved by proper adjustment of the muscular action of the two eyes by prisms or anatomy. Dr. George Stevens, of New York, ascribes all kinds of reflex nervous disturbances, such as chorea, epilepsy, mental aberration, etc., as well as sick headache, neuralgia, etc., to the nerve irritation, resulting from imperfectly acting ocular muscles, and reports numerous cases of cures by the operative correction of the defect. Time will demonstrate the value of this view in regard to epilepsy, mental trouble, etc., but the reporter thinks there is no doubt of their correctness in regard to headache, eyeache, etc., as he has had extremely favorable results in such cases by following Dr.

Steven's method of tenotomy, resection of the recti muscles for their relief. Dr. Stevens in the past year has presented an instrument called a phorometer, which simplifies the determination of muscular defects, and is valuable in the saving of time and in producing greater accuracy. In his own experience the reporter finds that the modified tenotomy of a contracted tendon and resection of its antagonist gives better results in strabismus than the ordinary method of complete tenotomy, giving more perfect motion and a better chance for fine ocular vision.

In otology and laryngology, there is little to report, beyond noticing the facts that the dependency of aural diseases upon nasal troubles is becoming more generally recognized, and that the treatment of nasal diseases is becoming more strictly surgical—so-called catarrh being radically relieved only by surgical measures and not by local applications, which are only useful for cleansing and antiseptics.

PRIMARY IRITIS—ITS DIAGNOSIS AND TREATMENT,

was the title of a paper read by DR. J. HERBERT CLAIBORNE, JR., of New York. After an anatomical description of the iris and contiguous parts, he remarked that it was important to remember that in a condition of health, the edge of the pupil rested on the anterior surface of the lens in moderate dilatation. The diagnosis was to be made by the signs rather than the symptoms of the disease. The chief signs were pericorneal redness, steamy cornea, clouded aqueous, discolored iris, small pupil, irregular and puckered edges of the pupil, etc. Tenderness on pressure in the ciliary region was the symptom indicating a high stage of ciliary congestion, but not necessarily of cyclitis. Treatment was comprised under the great “therapeutic trilogy,” local depletion, dilatation of the pupil, and systemic treatment. Local depletion was best obtained by that leech that takes deepest hold, sucks the longest and draws most blood. Bleeding should be encouraged by hot applications to the bites. The position for the leeches was in the temporal fossa, in a horizontal line with the outer canthus of the eye, to drain the temporo-malar branches of the lachrymal arteries. He preferred to combine cocaine with mydriatics on account of the greater mydriatic power of such combination, and the analgesic effect of cocaine. He preferred duboisin (1 per cent.) combined with cocaine (6 per cent.). With regard to systemic medication, he uses blue ointment, salicylate of soda, iodide of potassium, the iodide combined with bichloride or the biniodide of mercury, antipyrin and Russian or Turkish baths, and quinine for its general tonic effect. He laid much stress on the value of salicylate of soda, especially in rheumatic iritis. It was also of great

value in the specific forms of the disease, as assisting the action of the other agents. There is no need of opium or morphia in iritis. If the pupil could be dilated, pain would cease; if it could not be antipyrin was a good substitute for morphia. Too much stress could not be laid on the importance of the early treatment of iritis with regard to preserving the sight. The responsibility of treatment rests on him who sees the case first.

DR. LEWIS G. PEDIGO, of Roanoke, reported on

ADVANCES IN NEUROLOGY AND PSYCHOLOGY.

He regarded the development of the suspension treatment of locomotor ataxia as the most important step of progress in neurology in the past twelve months, and devoted considerable time to the consideration of this subject. Other items of progress in neurology were reviewed; the problems of asylum management and general care and treatment of the insane received due attention. A brief allusion was made to Stephen Smith's project of a law for commitment and detention of the insane. The present status of various questions of medical jurisprudence was presented at length. The latter part of the paper was devoted to hypnotism and allied phenomena. This part of the paper was illustrated by actual experiments before the society on a subject who, the doctor claims, is one of the very best and, in some respects, most remarkable hypnotic subjects in the world. He succeeded, by his own modification of the Bernheim and Charcot methods, in throwing this subject into the hypnotic trance in about one-third the time required by Bernheim to hypnotize his very best subjects. *La Petite Hypnose* and *La Grand Hypnose* (in its three stages), as delineated by Charcot in *Salpêtrière*, were demonstrated in clear and rapid succession.

A paper by DR. E. M. MAGRUDER, of Charlottesville, Va., was presented, reporting two cases of

NEURECTOMY FOR FACIAL NEURALGIA, WITH RECOVERY.

His first case was a gentleman, aged 71, who had the persistent neuralgia for fourteen years that no medicine cured, although he had consulted eminent specialists. Seven drops of fluid extract of gelsemium every three hours gave greater relief than any other medicine, except morphia; but all medicines failing, the patient was chloroformed, and with strict antisepsis an incision was begun below the lower orbital margin, over the infra-orbital foramen straight downwards, parallel with the nose, towards the lip and ending on a level with the lower border of the alæ-nasi—about an inch incision. The fasciæ and fibres of the levator labii superioris were torn through with the handle of the scalpel and the nerve exposed at its exit, where it divided into its branches. Each branch, the palpebral, the

nasal and the labial, spreading into a fan shape as it neared its destination, was dissected out as far as it could be followed without mutilating the face too much. The main trunk was then seized with forceps at the foramen, drawn out as far as possible without breaking it, and cut off close to the bone, after which the various branches were divided at their farthest point of dissection. The wound was closed with fine silk sutures. There was at first considerable paralysis of the side of the face and loss of sensation, but these disappeared except from the right half of the upper lip, which is still without motion or sensation. There has been no recurrence of the neuralgia. The patient feels like a new man.

Case 2 was a lady, age 58, who has had facial neuralgia for ten years. At first it was confined to the left lower jaw, never passing the middle line of the chin, but afterwards extended to the left external ear, temple and side of the head above and behind the ear (auriculo-temporal) to the left side of the tongue (gustatory), and then to the left side of the floor of the mouth (mylo-hyoid). The diagnosis was neuralgia of the inferior dental nerve, with reflex and sympathetic phenomena exhibited by the auriculo-temporal, gustatory and mylo-hyoid nerves. As to treatment, teeth had been extracted, analgesics had been used, etc., and finally total neurectomy of the inferior dental nerve, including its branches, was done with cure. In the operation avoid injury of the facial artery and Steno's duct. Entering the scalpel just in front of the posterior border of the ramus, just below the parotid duct and lobe of the ear, a curvilinear incision was made downwards, half an inch in front of the inferior maxillary angle, then forwards a little above the lower border of the ramus, and upwards just behind, and avoiding the facial artery, stopping short of the line of Steno's duct above. The flap thus shaped was raised by shaving the masseter muscle from its attachment to the outer surface of the ramus and the bone laid bare. With a half inch trephine he cut out a button of the bone from the center of the outer plate of the ramus, exposing the nerve in its bony canal. Seizing the proximal end of the nerve with forceps, strong traction was made from the direction of its origin. It was then cut off with scissors close to the bone as it entered the circular cavity made by the trephine. Then, the wound being stuffed with moist antiseptic cotton and the hæmorrhage stopped with pressure, a second incision was made, an inch long, horizontal in direction, over the mental foramen (below the root of the second bicuspid tooth), beneath the depressor anguli oris, disclosing the mental nerve and its branches beneath the last named muscle. The nerve was grasped with forceps and pulled upon, but broke off at its point of exit. The branches were then dissected out and cut off as far as possible from

the foramen. Then returning to the first wound over the ramus, and chiselling away the wall of the dental canal, or one-eighth inch from the circular cavity in the ramus, so as to expose this end of the nerve, which had been divided by the distal side of the trephine, it was drawn out of the dental canal with forceps in its entire length from the ramus to the mental foramen. In all, 3.38 inches of nerve structure were removed. The wounds were closed and the patient was perfectly relieved without any return of neuralgia since. The paralysis of the left side of the face disappeared in about two weeks.

The lesson learned is: In all operations for facial neuralgia remove as much of the troublesome nerve and its branches as the anatomical formation of the parts will possibly allow without rendering the procedure too grave.

DR. C. R. CULLEN, of Waldo, Fla., read a paper on

RAILROAD INJURIES.

He reported eight cases of railroad accidents. He urged that doctors not engaged in the service of railroads insist upon the same compensation, when they are called upon for such service, that is received by doctors engaged in the railroad service.

DR. HUGH BLAIR, of Richmond, Va., read a paper on

DIAGNOSIS BY MEANS OF URINARY ANALYSIS.

Harley says the state of the urine is a key to the condition of the body. While some diseases may not affect the urine, morbid urine indicates disease. *Renal inadequacy* (notable absence of urea and other solids), due to want of the necessary nerve influence, is shown by the low specific gravity of the urine, other causes being excluded. In overworked nervous systems, excess of alkaline phosphates in the urine occurs. Probably the nervous system is fed with phosphorus to lecithin. The best way of supplying phosphorus to lecithin is to give hypophosphites. If indigestion and improper metabolism occurs, deleterious matters accumulate in the blood; if of nitrogenous character, the kidneys excrete them, if they are able. Destructive metamorphosis of albuminoids in the liver forms urea. Uric acid crystals, easily recognized by the microscope, appear in the urine in some functional hepatic disorders and lesions, causing gout, chronic nephritis, renal calculi, etc. If the crystals do not appear, excess of urates, acid urine, with high specific gravity, are present. *Lithuria* (uric acid in the blood) is a chronic condition of the overworked and over-anxious, is not so serious as gout, but is ever active in causing obscure and distressing symptoms. It points to chronic functional disturbance of the portal circulation, and is recognized by the high specific gravity of the urine, its acidity, excess of lithates and phosphates, and

often oxalate of lime crystals, and especially pigments in the urine. It gives a peculiar change in color to the urine during Pavy's copper test for sugar. *Diabetes* indicates grave systemic disease; but it should be differentiated from hydruria and polyuria. *Icteric urine* stains white cloth yellow, but its diagnostic value is not of practical use. In short, the value of urinalysis extends to every disease characterized by pathological urine, as the Bright's disease, pyelitis, cystitis, etc. Numerous urinalyses made by him for physicians had enabled the practitioner to determine their diagnoses and oftentimes save the lives of patients.

DR. A. F. KERR, of Williamsville, Va., reported a case of

EXTERNAL GLANDERS, OR FARCY IN MAN.

The rarity of the disease, especially in mountainous regions justified, he thought, a note or two about the case. Glanders is an infectious disease, principally of domesticated equine animals, and communicated to other animals, and to man by inoculation of the glanders bacillus. It originates in solipeds, although it has been known to originate in cloven footed animals. Having originated, infection occurs only for a short distance through the atmosphere, or the disease may be communicated through the ingestion of infected matter, or through the seminal secretions to the female in coitus, etc. In man, the chief source of infection is the horse—it being rarely communicated from man to man. The point of attack is usually an abrasion upon the skin or mucous membrane. The incubative period is from one to four days in inoculated cases. The wound becomes tense, swollen, painful, with a dark or yellowish erysipelatous redness, and the edges become puffy and everted. A sanious matter issues, and the surrounding lymphatics become swollen and red, and the glands become enlarged and tender. Constitutional disorder acts in a few days—languor, extreme weakness and prostration, with aching in the limbs and head, rigors alternating with fever, or a continued fever after the first violent chill; sometimes there is nausea and vomiting, and even diarrhoea. When not due to external inoculation, the febrile symptoms appear first, and then the other conditions, which have been noted first in the description of cases due to external inoculation. The phlegmonous swellings along the lymphatics become abscesses, and discharge small quantities of a thick slimy pus. The resulting sores become ulcerous with grayish base. Temperature rises perhaps to 104°.

His case was a young healthy man in 1886. He contracted glanders from treating a mare supposed to have "greased heel" or "scratches." He first noticed a painful swelling on the point of the second finger of the left hand, which had

been slightly cut with a pen knife. The swelling was yellowish, edges of wound everted and puffy, and discharged a thin sanious material; the surrounding lymphatics became enlarged and all the fullness of the history of glanders in man was complete. Treatment began with a brisk purge, followed by quinia and muriated tincture of iron, and an exclusive milk diet. The swellings on the forearm were freely laid open and cauterized with nitrate of silver, all diseased tissues removed, and the resulting sores packed with iodoform, over which was laid medicated jute. Subsequent washings were made with carbolyzed water. Recovery was prompt.

DR. W. W. PARKER, of Richmond, Va., read a paper on

A FEW ORIGINAL OBSERVATIONS ON BLOOD GRAVITATION IN HEALTH AND DISEASE.

of which the following is a synopsis:

1. The first wound ever inflicted upon the human body was probably upon one of the extremities, and the relief following the elevation of the wounded member was the first illustration of blood gravitation in disease.
2. A case reported of the wonderful curative power of elevating the leg at 80° , of a boy struck in the tibia by a base-ball.
3. A singular case of death from the application of a mustard-plaster to the ankle, being an exception to the rule, yet establishing it.
4. The gravitation of blood in the stomach made useful in preventing emesis in certain cases.
5. A remarkable case of acute inflammation of the neck of the bladder, in a woman, with retention of urine, at once removed by the forcible elevation of the hips of the patient. Other cases reported.
6. The avoidance of varicose veins of the legs in shop-keeping men and women by sleeping on a double inclined plane; and the importance of those predisposed to apoplexy, sleeping with the head well elevated.
7. The effect of the position of the body in phthisis, in liver and other congestions. A case of an infant with suffocating catarrh at once relieved by the elevation of the head and chest.
8. A beautiful illustration found especially in the herbivorous or grazing animal of nature's plan of counteracting the hurtful gravitation of blood to the brain.
9. A lesson suggested from these considerations and facts to those unwise doctors and deluded people, who think "a man cannot die till his time comes." That mechanical law in the body is as inflexible as the same law in the machine, and loss and ultimate destruction will come as certainly from neglect of these laws, to the one as to the other.

DR. A. C. PALMER, of Norfolk, Va., prepared a paper on

OUTLINE TESTS FOR MUSCULAR INSUFFICIENCIES OF THE EYE, WITH REPORT OF A CASE.

Leaving out of consideration cases of strabis-

mus, etc., he confined attention to the more minute forms of insufficiencies, known by the term *heterophoria*. In strabismus one eye soon accustoms itself to see the object looked at, while the other is idle as to effort at vision; but in heterophoria there is acute normal vision, in which every detail of an object is seen, but the external rectus of one or both eyes is just too weak to prevent the internus rectus muscle from turning the ball in, just past the normal axis. Eyes such as these have to swing a very little way to make the image seen with one eye a little to one side of that seen with the other, and the confusion resulting is all the worse from the very fact that each eye sees so clearly that neither image can be ignored. The patient has before him two similar images which are continually receding from and blending with one another; but he will involuntarily overcome this blurring of outlines if he can possibly spur up the externus muscle to pull the eye out to its proper place. Just these insufficiencies or strains produce more mischief than true strabismus. Heterophoria is subdivided into esophoria (eyes tend to turn in too far), exophoria (tend to turn out too far), and hyperphoria (where one eye swings on a higher level than its fellow). Prisms deflect an image towards their apices or their edges. The relative strength of each of the four recti muscles, in their normal conditions, are first presumed to be ascertained. Thus the externi should diverge the eyes sufficiently to make the image single when prisms of 8° are placed before them with their bases in. The interni, after a little trying, should converge sufficiently to single images when prisms of 50° are placed before them, bases out. If a patient with neurasthenia presents, place him in an erect position and direct his vision on a lighted candle, 20 feet off; then cover each eye alternately and notice whether the light moves up or down, or to the right or left. This paralax test, introduced by Dr. Alexander Duane, of New York City, often establishes at once the form of insufficiency; but should it not do so, then use the prism tests, which the paper describes in detail. Dr. Palmer then explained the application of glasses to overcome each of the insufficiencies.

DR. D. MAYER, of Charleston, W. Va., read a paper on the

USE AND ABUSE OF OBSTETRIC FORCEPS.

He showed that when the forceps are properly used they are not damaging; that harm may come when used too late; that the time has arrived in obstetric advances when the practitioner will be compelled to use them, because intelligent women demand their application to shorten their period of suffering.

DR. L. B. ANDERSON, of Norfolk, Va., presented the *Report on Hygiene and Public Health*, in which he classed the etiological factors into

(1) those which are known, (2) those which are purely hypothetical and chimerical, such as malaria, vegetable parasites, bacteria, etc., (3) those that are partly demonstrable and partly hypothetical, namely ptomaines and leucomaines, from which sanitary laws are deduced.

DR. J. G. WILTSHIRE, of Baltimore, Md., read a paper on *Anæsthetics*, but retained his manuscript for some revisions.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Annual Meeting of the New York State Medical Association—The President's Address on Tubal Pregnancy—Laying the Corner Stone of the New Building for the Academy of Medicine.

The sixth annual meeting of the New York State Medical Association, which was held at the Hotel Brunswick, during the last week of September, was, like all its predecessors, successful and interesting. The well arranged programme previously published was in the main faithfully carried out, and, as in former years, the chief features of interest were the set discussions on topics of scientific and practical value. This year there were three of these discussions, the first being on "Tubal Pregnancy," and opened by the President of the Association, Dr. Wm. T. Lusk; the second on "The Treatment of Hernia," and opened by Dr. Joseph D. Bryant; and the third on "The New Hypnotics: sulfonal, amyl hydrate, hydrobromate of hyoscin, hypnone, paraldehyde and urethran," and opened by Dr. Wm. H. Flint.

Among the most noteworthy separate papers were the Address in Medicine, on "The Bacteriological Test of Drinking-water," by Dr. Edward K. Dunham, which was a contribution of the highest scientific merit, and a paper by Dr. H. D. Didama, of Syracuse, entitled "A Few Fads," which was extremely full of the wit and dry humor so characteristic of its accomplished and genial author. A case of exceptional interest was also presented by Dr. Lewis Hall Sayre; this being one in which, for the first time on record, a patient has been enabled to wear an artificial limb after amputation at the hip-joint. The operation was performed (by Dr. Reginald Sayre) for bone disease (mollities ossium), in such a way that flaps were left with a sufficient amount of the muscles of the thigh to secure a certain amount of "grip" for the artificial leg; and there can be little doubt that the case inaugurates a new era in hip-joint amputations.

In the limits of this correspondence it is manifestly impossible to give even a satisfactory outline of the work accomplished at the three days'

session of the Association, and the remaining space at disposal for this subject will therefore be devoted to a brief consideration of the able and brilliant address of the President on "Tubal Pregnancy;" which, however, can afford but a very inadequate idea of its exhaustive character.

Dr. Lusk first reported two cases of tubal pregnancy of his own in which laparotomy was performed after rupture. In the first complete recovery followed and since the operation the patient has enjoyed better health than at any time previous in her life. In the second case the patient was affected with Bright's disease, and died from this cause on the eighth day after the operation. These two cases, he said, illustrated the ordinary history of tubal pregnancy. In both, without antecedent symptoms at an early period of gestation rupture with hæmorrhage took place; in the one instance the blood primarily making its way between the folds of the broad ligament, in the other passing suddenly, without check, directly into the peritoneal cavity. They were simply additions to the long list already furnished by Mr. Lawson Tait, upon which he had based his scheme of ectopic gestation. In Mr. Tait's belief all cases of extra-uterine pregnancy were *ab initio* of tubal origin. He denied the possibility of a primary abdominal pregnancy; while the ovarian form he regarded as possible, but not proven.

There was no question, Dr. Lusk said, as to the utility of Mr. Tait's scheme. It was based upon his exceptional personal experience and had received substantial support from the observations of others. It had stimulated active inquiry and given proper direction to pathological study; but the subject was still too new to make it possible for any scheme to be regarded as a finality. The most interesting outcome of Mr. Tait's work had been the change of view as regards the existence of primary abdominal pregnancy, and there was at present a very general agreement that the reported cases are at least open to grave suspicion.

In regard to the etiology of tubal pregnancy, Mr. Tait was unquestionably right in insisting upon the importance of the various forms of salpingitis. Owing to the associated loss of epithelium, the dilatation and other changes in the tube walls, the two active forces which propel the ovum through the tube, viz.: the ciliated movements and peristalsis, were weakened or destroyed, while free ingress was afforded to the spermatozoa. Or, again, the passage of the ovum might be interfered with by the secondary results of catarrhal inflammation, such as the production of mucous polypi, of adhesions, or of sac-like dilatations. Formerly great stress was laid upon the etiological importance of flexions and constrictions resulting from old peritoneal adhesions and inflammatory bands; but, curiously enough, in recent laparotomies for tubal rupture this cause had not played an important part. Recent observations

had also shown that there is a tendency of tubal pregnancy to recur.

The burning question at this moment connected with tubal pregnancy was that of early diagnosis. Dr. H. J. Hanks had recently stated his belief that a diagnosis can be made in 95 per cent. of the cases we are called upon to attend. Mr. Tait, on the other hand, thought "he might be excused for maintaining a somewhat skeptical attitude concerning the correctness of diagnosis of those gentlemen who speak of making a certain diagnosis before the period of rupture." In the main, Dr. Lusk said, our dependence must be upon local symptoms and local changes. The former consisted of the suspension of the menses, often followed, after a brief period, by bloody discharge, of paroxysmal pains, and of the discharge of the decidua. But the latter was by no means of constant occurrence, while paroxysmal pains were frequent in other forms of tubal disease, and menstrual disturbances were common phenomena in uterine derangements. As a matter of fact, the occasion for diagnosis must be very exceptional in the large class in which rupture occurs primarily within the peritoneal cavity. In the intraligamentous form the case was somewhat different. Here the swelling to the side of the uterus was easily reached through the vagina, and he believed in such cases that the chances of error were slight. He did not understand Mr. Tait to deny the possibilities of a diagnosis under such conditions. He differed only in regarding all intraligamentous cases as secondary to tubal rupture. Not much dependence was to be placed upon uterine changes in the early months; but after the third month it was not ordinarily difficult to determine the existence of the pregnant state. The distinction of physical signs between the tubal, the ovarian and the secondary abdominal form was scarcely practicable so long as trained anatomists failed to agree concerning them when the abdomen has been opened and the organs exposed to view.

A review of the subject of diagnosis made it apparent that many cases of ectopic gestation present no symptoms previous to rupture. In another class the existence of a suspicious tumor with few or none of the corroborative signs should lead to a waiting policy, or, when the symptoms were of a threatening character, to an explorative laparotomy. Upon the fact that in favorable cases certainty of diagnosis is attainable in the early stages of ectopic pregnancy rested the entire argument as to the validity of the treatment by means of electricity. The only argument against this treatment, except that the results reported carried with them the evidences of ignorance and folly, was that it is likely to cause rupture and that the retained ovum is liable to excite suppuration. But these eventualities were so rare that they might be left in case of need to a subsequent

laparotomy. It should be understood that this means of treatment was only available in the first three months, and that no one in this country, as was commonly assumed by foreign critics, advocates electro-puncture.

The argument in favor of the early use of galvanism did not in the slightest degree impair the value of laparotomy, which must always remain our most important therapeutical resource. Laparotomy not only possessed the advantage of being the one measure for the treatment of cases where, as in rupture, death is the common alternative, but it enriched our resources in cases of impending danger. Unlike the employment of galvanism, it presupposed the equipment necessary for laparotomy and the skill that comes from experience. It possessed this advantage: it leaves nothing to chance. All the possibilities are under the control of human intelligence; and, except for the question of ethics, it was available both before and after rupture. The late results with this procedure left little reason to doubt that when the anatomical conditions come to be properly realized human invention will find means to control the dangers of the so-called primary operation for extra-uterine pregnancy, and it too will find its place in the domain of legitimate surgery.

The corner-stone of the new building of the New York Academy of Medicine was laid in the presence of a large assemblage of physicians and distinguished men of other professions by the President of the Academy, Dr. Alfred L. Loomis, on the afternoon of October 2. On this occasion the invocation was by Bishop Potter and the principal address by Dr. A. Jacobi, ex-President of the Academy. The feature of chief interest, however, was an address by ex-President Grover Cleveland, who followed Dr. Jacobi, and this was delivered with that clearness, dignity and grace so characteristic of his public speeches. In the course of it he said: "To the members of this organization the corner-stone which we now lay is an honor, for it is a monument which marks an important advance in the attainment of the purpose of the Academy as declared in its constitution, 'the promotion of the science and art of medicine.' In these extensive foundations is also found proof of the progressive ideas of these earnest men and their constantly enlarging estimate of what is necessary to meet the purposes to which their energy is directed. . . . I am sure that you are not inclined to ignore the aid you have received in the project you have undertaken from the laymen among your Fellows. Nor can you forget that underlying all that you have done and all that you have received are our free American institutions, which encourage and give scope to every worthy effort and which offer fitting rewards for intelligent and well-directed labor in every condition of life. I hope that when we shall celebrate here the discovery of our country we

may point out on this spot, in your completed building, a splendid monument of the progress of our medical education, a monument which shall not only prove to the stranger that our physicians are proud of their profession, but one which shall also be a reminder that those who govern within its walls to not forget in their devotion to the science and art of medicine the other duties of citizenship."

It did not perhaps occur to the illustrious speaker how much more is done for the fostering of scientific investigation by some of the "effete monarchies of Europe" than by the great and glorious Government resulting from our free American institutions.

P. B. P.

The Rush Monument Fund.

The attention of the secretaries of county medical societies throughout the United States is called to the resolution adopted at the meeting of the American Medical Association at Newport, "that one member of each county medical society in the Union be appointed to solicit funds for the *Rush Monument*," and they are requested, at the next meeting of their several societies, to ask that such a member be designated for this purpose, and to send his name and address either to the undersigned, or to Medical Director Albert L. Gihon, U. S. N., Chairman of the Rush Monument Committee, U. S. Naval Hospital, Brooklyn, N. Y.

All subscriptions, however, should be remitted directly to the Treasurer of the Rush Monument Committee, Dr. DeWitt C. Patterson, 919 T street, N.W., Washington, D. C.

WILLIAM B. ATKINSON,
Permanent Secretary A. M. A.

1400 Pine street, Philadelphia, Pa.

Unusual Length of Funis.

To the Editor:—I wish to report a case which, although by no means unique, is, nevertheless, not without interest. I recently attended a young woman, 22 years of age, in her first confinement. She was of slight figure and weighed less than 100 pounds. The child (which was found to weigh $9\frac{1}{2}$ pounds) was born in a condition of *asphyxia livida*, a condition produced by reason of a coiling of the funis around the neck. There were five of these coils, drawn very tight, notwithstanding which circumstance there was an abundance of slack left. The child was resuscitated without much difficulty, and in half an hour the placenta was delivered by Crede's method. The latter was of unusual size, being far larger than any other placenta I ever saw, although, as usual in such cases, it was by no

means proportionately thick. When expelled it was rolled up like a scroll. Following the third stage of labor there was a very considerable flow of blood, although the uterus contracted fairly well. This, however, soon stopped after the removal of a large quantity of clots from the vagina and cervical canal. There was a very apparent relation between the area of the placental insertion and the amount of blood lost. The cord measured 48 inches in length and was not especially attenuated. This length, although very unusual, has no doubt often been surpassed. Schneider recorded a funis 120 inches in length which made six turns around the child's neck; Bandelocque reported an instance in which a cord of 59 inches had seven coils; Mme. Waldwogel mentions a case in which there were eight coils.

Yours truly,

JUNIUS C. HOAG, M.D.

Chicago, October 9, 1889.

BOOK REVIEWS.

CATALOGUE OF SHARP & SMITH, IMPORTERS, MANUFACTURERS, WHOLESALE AND RETAIL DEALERS IN SURGICAL INSTRUMENTS AND DEFORMITY APPARATUS. Chicago, 1889; pp. 973.

This is a voluminous and excellent catalogue. It is very complete and well illustrated. Its arrangement is convenient. It is to be commended among trade publications.

THE PHYSICIAN'S LEISURE LIBRARY, SERIES IV. SYPHILIS OF THE NERVOUS SYSTEM, by H. C. WOOD, M.D., LL.D.; pp. 135. 1889. Detroit: George S. Davis.

The medical public is always glad to hear from one of its most honored exponents in this country, Dr. H. C. Wood, and if, therefore, an interest be awakened by the announcement of a new brochure bearing the above title, we can assure our readers that they will find no cause for disappointment in a perusal of the particular volume in question. There are few physicians who are in a position to speak more authoritatively upon this subject than Dr. Wood, who has reached the conclusions herein set forth from a study of 2,000 cases of nervous disorders associated with syphilis. Among the many points of interest made by the author is this one: That there is a syphilitic insanity which exists without obvious meningeal disease, and is capable of being cured by antisyphilitic treatment, in support of which view a table of illustrative cases is given with regard to the method of antisyphilitic treatment by the hypodermic injection of the insoluble salts of mercury, a method which has been greatly praised by some European physicians. The

author finds that the dangers of local inflammation are so great as to overbalance any special advantage which might thereby be gained. His first experience in its use resulted so unfortunately as to discourage its further employment.

MISCELLANY.

THE MCLEAN COUNTY (ILL.) MEDICAL SOCIETY met in the regular session at the office of Dr. C. J. Corley, October 7, at 3 P.M. There were present Drs. H. Parkhurst, M. Wilson, Wm. Hill, N. F. Jordan, F. J. Parkhurst, C. J. Corley, S. T. Anderson, C. C. Sater, A. L. Chapman, F. C. Vandervoort and M. D. Hull. Dr. C. E. Ballard, of Saybrook, was elected to membership. Dr. Wm. Hill was elected to fill the vacancy on the Board of Censors. Dr. F. J. Parkhurst's essay on "Electricity as a Therapeutical Agency" was very interesting, his explanation of the different kinds of instruments used showed him to be a man well versed in scientific principles. A vote of thanks was tendered the doctor for the excellence of his paper. Dr. D. A. White's essay on "Scarlatina" was attentively listened to by all present. Drs. M. D. Hull and William Hill were appointed essayists for the December meeting. The Society adjourned to meet the first Monday in November.

LETTERS RECEIVED.

Dr. H. Bart Ellis, Los Angeles, Cal.; Dr. C. W. Irion, Rocky Mount, La.; The Subscription News Co., Chicago; Dr. F. E. McKim, Marietta, O.; Dr. Wm. Pepper, Philadelphia; Dr. C. N. Boyd, Butler, Pa.; Dr. G. H. Grant, Richmond, Ind.; Syracuse College of Medicine, Syracuse, N. Y.; Fairchild Bros. & Foster, New York; Dr. C. S. Pixley, Elkhart, Ind.; Publishers' Commercial Union, Chicago; David Grove, Berlin, Germany; Dr. A. L. Hummel, Philadelphia; Dr. B. Corbeau, Civet, France; Dr. A. P. Brown, Fort Worth, Tex.; Dr. G. H. Eiskamp, Washington; Dr. James L. Taylor, Wheelersburg, O.; Dr. T. Delafield, New York; Dr. Chas. W. Dulles, Philadelphia; The American and Continental Sanitas Co., New York; Dr. John O. Roe, Rochester, N. Y.; O. V. Dubia, Chicago; Dr. J. H. Bryan, Washington; John N. Paton, Chicago; The Postmaster, Minneapolis, Minn.; Dr. Eugene Grissom, Raleigh, N. C.; George Tiemann & Co., New York; Lea Bros. & Co., Philadelphia; D. Appleton & Co., New York; Keystone Watch Co., Philadelphia; J. H. Bates, New York; Dr. James Tyson, Philadelphia; Dr. J. A. Boracky, Alma Centre, Wis.; Medical and Surgical Sanitarium, Battle Creek, Mich.; Dr. G. S. Hall, Worcester, Mass.; Dr. D. C. Stillians, Chicago; Horlick Food Co., Racine, Wis.; Dr. Wm. Creighton Woodward, Philadelphia; Popular Science News Co., Boston; Dr. F. E. Waxham, Chicago; Dr. M. A. Bogie, Kansas City, Mo.; J. H. Chambers & Co., St. Louis, Mo.; Dr. R. J. Dunglison, Philadelphia; Dr. Freudenthal, I. Haldenstein, New York; Dr. Henry O. Marcy, Boston; Dr. S. C. Newlin, New Salem, Ind.; Dr. Llewellyn Elliot, Washington; Ensworth Medical College, St. Joseph, Mo.; Mellier Drug Co., St. Louis, Mo.; J. B. Lippincott & Co., Philadelphia; Parke, Davis & Co., Detroit, Mich.; Dr. D. DuPré, Dallas, Tex.; Dr. C. F. Disen, Minneapolis, Minn.; Dr. Wm. Brodie, Detroit, Mich.; The Postmaster, Mortimer, Kan.; John Wanamaker, Philadelphia; Dr. H. R. Storer, Newport, R. I.; College of Physicians and Surgeons, Baltimore, Md.; Charles H. Phillips Chemical Co., New York; Dr. E. E. Montgomery, Philadelphia; Dr. M.

Stamm, Fremont, O.; Dr. J. W. Gleitsmann, New York; Dr. M. P. Hatfield, Dr. Jno. A. Robison, Chicago; The Parmenter Printing Co., Lima, O.; Rush Medical College, Chicago; Dr. Joseph Hoffman, Philadelphia.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from October 5, 1889, to October 11, 1889.

Lieut.-Col. A. K. Smith, Surgeon U. S. Army, leave of absence extended twenty-one days on surgeon's certificate of disability. Par. 7, S. O. 234, A. G. O., October 8, 1889.
Capt. Edward C. Carter, Asst. Surgeon U. S. Army, granted leave of absence for twenty days. Par. 6, S. O. 234, A. G. O., October 8, 1889.
Capt. Benjamin Munday, Asst. Surgeon U. S. Army, granted four months' leave of absence. Par. 2, S. O. 233, A. G. O., October 7, 1889.
Asst. Surgeon William P. Kendall, U. S. Army, granted leave of absence for one month. S. O. 93, Dept. of the Platte, October 2, 1889.
Surgeon Wm. S. Tremaine, U. S. Army, relieved from temporary duty at Ft. Leavenworth, Kan., and will return to his home (Buffalo, N. Y.). Par. 13, S. O. 230, A. G. O., October 3, 1889.
Surgeon Benjamin F. Pope, U. S. Army, relieved from duty at Ft. Clark, Texas, and will report for duty to commanding officer, Whipple Bks., Ariz. Ter. Par. 11, S. O. 230, A. G. O., October 3, 1889.
Surgeon John S. Billings, U. S. Army, detailed as delegate to represent the Medical Department of the Army at the annual meeting of the American Public Health Association to be held at Brooklyn, N. Y., October 22, 1889. Par. 10, S. O. 230, A. G. O., October 3, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending October 12, 1889.

Surgeon G. A. Bright, detached from temporary duty at the Naval Academy and placed on waiting orders.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Six Weeks Ending October 5, 1889.

Surgeon C. S. D. Fessenden, granted leave of absence for thirty days. October 3, 1889.
Surgeon Walter Wyman, granted leave of absence for thirty days. September 3 and 21, 1889.
Surgeon H. W. Sawtelle, granted leave of absence for seven days. September 26, 1889.
Surgeon H. W. Austin, granted leave of absence for thirty days. September 9, 1889.
Surgeon J. M. Gassaway, when relieved at New Orleans, La., to rejoin station at Cairo, Ill. September 30, 1889.
Surgeon C. B. Goldsborough, leave of absence extended thirty days on surgeon's certificate of disability. September 16, 1889.
P. A. Surgeon S. T. Armstrong, relieved from duty at New York; ordered to command of Service at Cleveland, O. September 17, 1889.
P. A. Surgeon R. P. M. Ames, assigned to duty at New Orleans, La., upon expiration of leave of absence. September 30, 1889.
P. A. Surgeon J. H. White, leave of absence extended thirty days on surgeon's certificate of disability. September 21, 1889.
Asst. Surgeon Seaton Norman, granted leave of absence for thirty days, to take effect when relieved. October 4, 1889.
Asst. Surgeon W. J. Pettus, ordered to Portland, Me., for temporary duty. September 26, 1889. Granted leave of absence for twenty-six days, to take effect when relieved. October 3, 1889.
Asst. Surgeon J. J. Kinyoun, granted leave of absence for thirty days. September 21, 1889.

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No. 17.

ORIGINAL ARTICLES.

THE INDUCTION OF PREMATURE LABOR IN THE BRIGHT'S DISEASE OF PREGNANCY.

Read in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY JAMES TYSON, M.D.,

PROFESSOR OF CLINICAL MEDICINE IN THE UNIVERSITY OF
PENNSYLVANIA.

In reviewing my experience with Bright's disease associated with pregnancy, either as a consequence or an accidental complication, I have been led to believe it possible to formulate more precisely than has been done, the conditions under which premature labor may be induced with a view to averting the tragic termination so often met, premising also that I believe that certain lives now lost might be saved.

I would recommend the induction of premature labor with a view to saving the life of the patient, first, in cases of Bright's disease complicating pregnancy where in a previous pregnancy there has been puerperal nephritis with grave complications. Such are illustrated by the following:

Mrs. N. P. A., when pregnant at 25 years of age with her second child, first noted swelling of her feet when six months advanced. Thence dropsy spread over the entire body, including the face. During this time there were albuminuria and amaurotic symptoms. At eight months she miscarried with a dead fetus. For two or three days after this she seemed to be doing well, when there occurred a sudden aggravation of symptoms, inexplicably ascribed by the physician in attendance to hydro-pericardium. While apparently at the worst she lay back, in a short time fell asleep and slept ten hours almost continuously. After this she began to improve, and the decided symptoms of dimness of vision which had preceded her labor and had continued, disappeared suddenly. Four hours later, however, there occurred complete paralysis of the right side, with entire loss of speech, but not of consciousness. There was also some mental hebetude. She did not speak a word for three weeks, after which she began slowly to improve in speech, and gradually to acquire the power of motion. When I was first consulted, June 26,

1885, a year had elapsed since her miscarriage. She could say almost anything by speaking slowly and she could walk half a mile without apparently dragging her foot, but there did seem to be some stiffness at the ankle. She could not open the fingers of her hand, but could close them; she could move her arm at the shoulder better than at the elbow. This history I had from her husband. I did not see the patient then or at any time. A specimen of urine, brought to me at this time, I found strictly normal.

On May 20, 1888, just about three years after I was consulted, and four years after the conception alluded to, Mrs. A. again conceived. She had the usual signs of pregnancy, and up to November 20 inclusive, being at the beginning of the seventh month, she was free from any signs of nephritis, as shown by examinations of the urine on three separate occasions.

On the 11th of December, three weeks later, her husband reported that for some time, probably a month, there had been slight swelling of the legs, and that this had rather suddenly increased on December 1, when it was noted above the shoe tops. There was also slight puffiness in the hands, while the swelling was evidently greater in the hand of the paralyzed (right) side and the leg of the sound side. A specimen of urine brought at this date contained one-fifth its bulk of albumen, some vaginal epithelium, but no tube casts. On December 17 the husband reported a decided reduction in the twenty-four hours' urine, while I found it containing one-half its bulk of albumen and numerous *hyaline tube casts*. The patient's general condition was reported about the same. A week later, December 24, at the beginning of the eighth month, while apparently quite as well as usual, Mrs. A. fell into a convulsion about 11 A.M. from which she never recovered, dying the same evening.

In this case I had advised putting off interference until some more actively dangerous symptoms presented themselves, an advice which, in the light of subsequent events, I believe to have been bad. The dangerous symptom was the lightning's flash which allowed no time for intervention. On the other hand, I think there is every reason to believe that if premature labor had been induced soon after the appearance of decided al-

buminuria the patient's life would have been saved. Under the same circumstances I should strongly advise premature labor. Observe, however, that it is in view of the fact that we had in the previous pregnancy of the same patient Bright's disease with symptoms of great gravity, and this fact I believe to be the turning-point in cases of this category.

Second. I would advise the induction of premature labor with a view to saving the life of the patient in all primiparæ in whom there is Bright's disease previous to pregnancy. So many cases of this kind have come under my notice in which death terminated a terrific scene at the first confinement that I have grown to regard the girl thus afflicted as walking to her sacrifice as she walks to the altar, and if the opportunity presents I discourage marriage in the strongest terms. Should it happen, however, that a girl thus afflicted does marry, she should never be allowed to go to term, but premature labor should be induced as soon as the fœtus is viable. I have often wondered, if the proper examination of the urine were made in every case before marriage, how many of those in whom a fatal puerperal nephritis developed would have shown albuminuria. I am inclined to believe the proportion would be surprisingly large.

Third. There remain only to be considered those cases of puerperal nephritis not included in the first and second categories, viz.: those in which we have not the knowledge gained by experience with a previous occurrence of the disease in the same patient, and those which are not primiparæ having Bright's disease previous to marriage. They include, therefore, acquired puerperal nephritis in primiparæ, acquired puerperal nephritis in multiparæ present for the first time, and acquired puerperal nephritis in multiparæ where a previous labor has been accomplished without serious results. These are in fact the cases in which it is most difficult to decide treatment, because the data determining action in the other cases are wanting. It is evident, therefore, that each case must be decided on its own merits. One fact of importance in the natural history of these cases must be emphasized as having an important bearing on the treatment, and that is that a large number of them terminate by miscarriage, and when they do so the patient is generally saved. I did not realize until recently how common this accident is, and was surprised in looking into the cases with which I have had to do to see how large a number miscarried. These cases, too, terminated favorably in every instance for the mother, but more rarely for the child. The following is a good illustration of this class: A young woman of 22, a patient in the Philadelphia Hospital, somewhat past the seventh month of pregnancy, developed uræmic symptoms. She had an albuminuria ranging from one-twentieth to one-tenth bulk. At times there were no casts in

the urine, at others were found casts of several kinds, including granular, hyaline and epithelial, and even waxy and pus casts. There was undoubtedly puerperal nephritis. A consultation decided on the induction of premature labor, but pending some further study of the case by myself she miscarried, certainly when not more than seven and one-half months advanced. The child died in four days, but the woman did well. This frequency of miscarriage in puerperal nephritis I find generally attested by others.

Another very similar case was seen with Dr. Koser, of Shippensburg, Pa., and Dr. Oliver, of Philadelphia. Mrs. F., æt. 26, married about eighteen months, miscarried with her first child at about three months, and when I saw her was six months pregnant with her second child, having conceived about the 26th of April, 1888. After the first miscarriage she had a little dimness of vision in her left eye, but apparently recovered completely. In July, 1888, she returned from a summer trip with severe neuralgia and more than the usual amount of morning sickness. Early in October a trace of albumen was found in her urine. Visual symptoms presenting, she came to Philadelphia to consult Dr. Oliver, who found *retinitis albuminurica* and sent her to me. There were no other symptoms of Bright's disease, except that she had to rise once at night to pass water, although this had been her habit as far back as she could remember. Her urine contained one-twentieth its bulk of albumen, but no casts. I gave the opinion that she had puerperal nephritis, but recommended that her bowels and kidneys be kept acting, but that no more active treatment be pursued until some more urgent symptoms supervened. She returned to her home and when next I heard from her she had miscarried, November 7, when apparently six and one-half months advanced. She made a good recovery.

These two cases go to show not only the tendency to miscarriage, but also the less dangerous nature of these cases.

That this termination is not invariable and that a case may progress to full term without accident is shown by the following case, seen in consultation with Dr. Parish, of Philadelphia:

Mrs. J., always delicate, never weighed more than 100 lbs.; had diphtheria at 19, but there is no evidence to show she had nephritis before she married. Four months, however, after conception, Dr. Parish found albuminuria. On February 19 I was consulted, when the albumen equaled one-half bulk, and there were hyaline, pale granular, and epithelial casts. There was also some œdema of the face and legs. It was decided to put her to bed, to eliminate gently by saline aperients and await more serious symptoms. A few days later, however, it being supposed she was nearly at term, it was decided to induce premature labor on February 27. On going to the house

for the purpose, Dr. Parish thought he recognized some symptoms of labor, and the next morning he found labor progressing. She was confined on the morning of March 2 without other complication than extreme exhaustion, from which she was, however, desperately ill, but ultimately recovered. The child also lived. Whence too, we may infer that it is not always necessary to induce miscarriage in order to save the patient; but note that these cases belong to neither of the two divisions of the first category.

Reverting to the third category of cases, it is plain that no definite course can be laid down. Each case must be decided on its own merits. In general, however, it may be said that the supervision of uræmic symptoms demands immediate interference, but, in consequence of the variety in these and their occasional simulation by symptoms due to other causes, great care must be observed lest an error in diagnosis be made. So also a marked degree of other symptoms of Bright's disease, such as interfere with important and necessary functions, may justify interference. As a rule, too, the same symptoms are more serious in robust women than in the delicate and less hardy. It is scarcely necessary to say also that Bright's disease acquired in the first pregnancy is a much more serious complication than in a later one, and although less serious than a Bright's disease previous to marriage on which a pregnancy has supervened, labor is rarely terminated without grave symptoms, while the patient often pays the penalty of her life. Under these circumstances, therefore, when the symptoms are of a positive or dangerous character, I should also favor the induction of premature labor.

DR. VAUGHAN remarked that certain women always have uræmic symptoms during pregnancy. We do not really know of what these symptoms are due, since it has been found that the urea is not a very poisonous agent. He agreed with the author that premature labor should be induced early in these cases, because if the condition has manifested itself once or twice it will surely return, and sometimes very quickly. The speaker cited a case in illustration. The patient had been pregnant several times and had convulsions in each instance. During the last pregnancy, twenty-four hours after an examination showed normal urine, albumen was found and she passed into uræmic coma. According to the speaker's opinion it is the wisest plan not to allow the women to go to full term. In primiparæ, however, we are not justified in acting so hastily. We know that the poisonous elements are formed from the proteids in the food and tissues. The speaker thought we could accomplish much with diet. Abstain from proteid food and keep up free elimination. He had in this way carried his cases safely through the dangerous period.

DR. ATKINSON thought the question should be confined to the consideration of the conditions which justify the induction of premature labor. It is just in primiparæ that we fear puerperal convulsions. According to his experience the contracted kidney is the most prolific cause of this trouble. He has had two or three cases that resulted most happily. He did not believe in one moment's delay after the mildest symptoms are manifested. Those suffering with other than the contracted kidney get along better.

DR. CHAMBERLAIN thought it best to carry the case on until the child has become viable. We often find that a miscarriage will occur while symptoms of albuminuria are disappearing.

DR. CARPENTER had been fortunate to see the larger number of such cases recover. He coincides that the contracted kidney was the most frequent cause of puerperal convulsions. If the cases be treated vigorously and promptly, we are often able to carry mother and child safely through the dangerous period.

DR. WILSON thought that the prophylactic measures proposed by Dr. Tyson would not likely be carried out. But in handling pregnant women the accoucheur may lay down certain rules, such as examining the urine every month, and thus be enabled to early recognize and treat the affection.

NOTES ON HOANG-NAN IN DISEASES OF THE SKIN.

Read before the Section on Dermatology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY JOHN V. SHOEMAKER, A.M., M.D.,
OF PHILADELPHIA, PA.

Hoang-nan is the native name of a plant which has been classified as *strychnos Gauthieriana*. It is a climber and belongs to the natural order *Loganiaceæ*. It rises unsupported upon a slender stem to a considerable height, when it winds around the branches of tall trees. Its stem is gray and its leaves dark green. On account of a resemblance to the *convolvuli* it is also known as tropical bindweed. Its specific title is in honor of the Roman Catholic missionary, M. Gauthier, by whom, in 1874, it was introduced to the notice of French physicians. Its habitat is the mountainous districts of Laos, Anam, Tonquin and Cambodia. It has been enthusiastically heralded as a remarkable remedy in leprosy, rabies, snake bite and fever. I have been engaged for some years in a study of its therapeutic virtues, and regret to say that my experience does not enable me to endorse the extravagant eulogies of some of its advocates. More recently, also, laudatory articles have appeared in the *British Medical Journal* and other periodicals, both domestic and foreign, with the tenor of which I am unable to concur. Nevertheless, the article has a wide sphere

of applicability and is a valuable addition to our resources.

Belonging to the genus *strychnos* its bark, which is the portion used, contains the alkaloids strychnine and brucine, the latter in larger proportion. Allied thus botanically and chemically, its medicinal action bears a close resemblance to that of *strychnos nux vomica*. In small doses it quickens and invigorates the heart, accelerates and deepens the respiration, stimulates secretion and, consequently, promotes the nutrition of the organism. Experiments upon frogs, rabbits and dogs show that in moderately large doses it produces clonic, succeeded by tonic convulsions. In excessive doses it causes a rapid and considerable decline of arterial pressure, powerful tetanic spasms, death occurring from respiratory failure and probably due to exhaustion of the respiratory centre. The heart continues to act, in warm-blooded animals, for a few minutes after respiration has entirely ceased.

In its home it is used in pill form made up with realgar and alum. In this country a fluid extract and a tincture have been prepared. I have usually depended upon the fluid extract, giving it in doses of from 5 to 30 drops in water three times a day. It is best given just before meals. It is promptly absorbed and is eliminated principally by the kidneys and the bowels, though I believe that the skin also assists in its removal. It increases intestinal secretion and peristalsis and has, therefore, a laxative effect. As it sharpens the appetite and improves digestion it beneficially influences nutritive processes. From among the diverse pathological states in which it may be advantageously prescribed I have selected for consideration before this Section those which concern the dermatologist.

I have adverted to its influence upon the glands of the skin. This consists in a stimulant, corroborant or alterative action upon the cutaneous glandular systems, both perspiratory and sebaceous, but more particularly the latter. By accelerating the circulation and by communicating increased tone to the muscular fibres surrounding the gland ducts it encourages healthy secretion. Accordingly, I have observed that it exerts a corrective power upon both the quantity and the quality of the secretions, increasing those fluids when they are repressed and checking them when excessive. This property which *hoang-nan* possesses renders it a valuable agent in the treatment of disordered secretion. I have witnessed marked improvement follow its use in *seborrhœa*. As this malady interferes with the growth of the hair, any measure which cuts short its progress obviates a tendency to baldness. In *alopecia*, likewise, *hoang-nan* has proved very serviceable in my hands. In *hyperidrosis* it is no less beneficial for the same reasons. In *anidrosis* it will often restore the functions of the glands, and in *bromidrosis* will efficiently assist

the action of the local measures employed. Some obscure defect of nervous energy often lies at the foundation of these functional troubles. A substance, therefore, like *hoang-nan*, which combines tonic and alterative properties, is eminently calculated to prove of service. In *acne* its corrective influence is often able to effect very happy changes in the morbid process. It softens the sebaceous plug and favors its discharge and, in consequence, the subsidence of the resulting folliculitis or perfolliculitis. In *sycosis*, also, which so often depends upon obvious nutritive failures, this drug has manifested an excellent remedial quality. I have seen marked improvement take place in *eczema pustulosum* from the administration of *hoang-nan*. As this form of the disease is very prone to occur in ill-nourished subjects, a remedy which promotes constructive metamorphosis is especially indicated. Amelioration was particularly observed in cases attacking parts of the body abundantly supplied with sebaceous glands. The inflammatory process has been abridged in *furunculus* by the timely use of *hoang-nan*. I have observed good results likewise from its use in *carbunculus*. Individual cases of *purpura* differ so widely in etiology that a wise selection of curative agents is extremely desirable. I have met with success in some cases of this affection treated by means of *hoang-nan* to the exclusion of every other remedy, so that the improvement could be ascribed to it alone, aided only by proper dietetic and hygienic measures. I have made trial of it in *erysipelas*, but am unable to report any decided results. It did not appear to be as effective as iron and quinine or *pilocarpin*.

Leprosy is a disease which, in this part of the world, the physician is not often called upon to treat. In one case, however, which was under my care, I kept the patient upon *hoang-nan* continuously for three months. My experience failed to corroborate the very glowing statements which have been made as to its value in this affection. Some gain in the constitutional condition may have resulted, but I cannot say that I was able to satisfy myself that the slightest effect was produced upon the local lesions.

Speaking broadly, all conditions of the skin—and they are many—which are either produced or are attended by digestive failure, an exhausted state of the nervo-muscular system or the imperfect function of glandular organs, may be benefited by the administration of *hoang-nan*. In this category I would place *lichen planus*, *lichen scrofulosus*, *erythema nodosum*, *herpes zoster*, *pemphigus* and *ecthyma*.

Chronic ulcers are often very notably improved by the administration of *hoang-nan*. The circulation of the diseased tissue is quickened, the lymphatics stimulated, and the granulations take on healthy reparative action. While this remark applies to those ulcers which have assumed a

chronic form owing to unhygienic surroundings, filth, cold, hunger or dissipation, I have had no reason to believe that hoang-nan is at all more efficacious in open cancer than the numerous other remedies which have been tried and found wanting. But in scrofula it has yielded very excellent results. Eczema as it occurs in scrofulous children has often been improved by a resort to the subject of this paper. It is, however, in the chronic adenitis characteristic of the disorder and in the ulcers left after the complete degeneration and evacuation of glands that I have especially seen the most favorable influence exerted. In syphilitic lesions likewise I have quite often availed myself of the tonic properties of the drug with satisfaction to myself and advantage to my patients. As we all know, there are epochs in the progress of syphilis when the impoverished blood, enfeebled appetite and digestion, inactive liver and swollen spleen—in brief, profound deterioration of systemic nutrition—call imperatively for relief and suggest an addition to or even an entire suspension of routine antisyphilitic medication. The fact, as I have said, is sufficiently well recognized, and yet it appears to be too often overlooked or neglected in actual practice. Marked constitutional depression due to the disease may be observed at all stages, but is more common in the later. The initial sclerosis, however, may take on unhealthy inflammation attended by severe constitutional reaction. The stomach becomes rebellious, the digestion much enfeebled, the liver inactive, the bowels capricious. In this state of affairs the exhibition of mercury or iodine will frequently prove prejudicial. Either will aggravate the digestive distress, act as a local irritant and seem a poison rather than an antidote. The same process, manifested by the same general disturbances, may show itself in the primary adenopathy. The later cutaneous lesions of the secondary stage, the development of gummy tumors and invasion of the viscera during the tertiary period may also, not seldom, be productive of a general condition in which, for a time, specific treatment will be of no avail or even work mischief. The later exceptions, also, often occur in conjunction with a general depraved condition of fluids and solids. The scaly syphiloderma, the pustular, the ulcerated tubercle, syphilitic ecthyma, rupia, extensive ulcerations of mucous membrane; each and all of these phases may necessitate the resort to tonic measures and the partial or complete suspension of specific remedies. When, under a tonic regimen, an appetite has returned, when the stomach has regained its power, the bowels and the kidneys act with regularity, when the liver has become capable of performing its functions, the specific drugs may be resumed with advantage. It is needless to dwell upon the circumstance that these unamenable cases usually develop in such persons as have abused their vital

resources by sexual excess, intemperance, continuous feverish anxiety regarding business matters, and the many other ways in which modern men "burn the candle at both ends." When it is judicious to do away with mercurials and iodides I have found much satisfaction in the employment of hoang-nan. It may be used alone or combined with iron and quinine or, if need be, cod-liver oil. This tonic treatment of syphilis is, I believe, too much neglected. I have not the slightest intention of detracting from the value and the necessity, in the vast majority of cases, of the approved mercurial or mixed plan of treatment, yet I am firmly convinced that there are times when this plan is harmful instead of beneficial, and to recognize such periods in the progress of the affection is no less necessary than to make the diagnosis that the disease is actually present. In fact, the recognition when to vary the specific by a tonic course is a sound evidence of the physician's power of discrimination.

GLANDULAR HYPERTROPHY AT THE BASE OF THE TONGUE AND ITS TREATMENT.

Read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY JOHN O. ROE, M.D.,
OF ROCHESTER, N. Y.

It is not unfrequently the case that many of the minor localized affections that give rise to a variety of disturbances, are not only entirely overlooked, but remain unsuspected. This has, to a great extent, been the case with the glandular hypertrophy which is of frequent occurrence at the base of the tongue; and it is not until recently that the importance of this diseased condition has been fully recognized.

In the pharynx and naso-pharynx are found collections of mucous and lymphoid glands which are aggregated into various masses at certain points. To these masses have been given the general name of tonsils. They are, however, further specialized as follows: the collection between the pillars of the fauces is termed the "faucial tonsil;" the mass in the vault of the pharynx, the pharyngeal, or "Luschka's tonsil;" while the mass collected together at the base of the tongue is termed the "lingual tonsil."

The glands composing these various tonsils are exactly identical in their structure, and have the same functions to perform. The chief function which these glands perform is unquestionably the secretion of mucus for the purpose of keeping moist the lower pharynx.

The upper pharynx, which constitutes a portion of the respiratory passages, is covered with columnar epithelium, and is abundantly supplied with muciparous glands for the purpose of modi-

lying the air in its passage to the lungs; while the lower pharynx, which constitutes a portion of the food tract, is covered with squamous epithelium and is very scantily supplied with muciparous glands, and hence arises the necessity for a lubricant for the pharynx from another source.

In addition to the secretion of mucus, important functions are attributed to the lymphoid tissue found in these masses. These are: first, the prevention of fluid waste in the economy, by reabsorbing the buccal secretions, particularly in the intervals of deglutition; secondly, the absorption from the food bolus in its passage over them of certain nutritious elements; and thirdly, the performance of a certain office in the blood manufacturing system, acting, as Hingston Fox expresses it, "as nurseries for young leucocytes planted by the water side and drawing their sustenance from the nutrient stream." ("The Functions of the Tonsil," *Jour. Anat. and Physiol.*, London, 1885-6, vol. xx, p. 559.)

This glandular tissue is moderately supplied with blood vessels, and it is surrounded by a network of these vessels more or less spread out over the base of the tongue.

Subject as this tissue and these blood vessels are to all the variations of the temperature of the fluid and solids that pass over them, and to the direct effect of many of these substances that tend to irritate the tissue and to cause engorgement of the blood vessels, it is not surprising that abnormal conditions of these parts are frequently found.

It is, therefore, almost invariably the case that associated with a hypertrophied condition of this glandular tissue is an abnormally distended condition of these blood-vessels. And it is the varying degrees of the distention of the blood-vessels supplying this glandular tissue and of those surrounding it, which account for the varying degrees of enlargement or projection of this glandular tissue and the different appearances that these parts present on inspection at different times. The condition of this tissue and of these blood-vessels, therefore, not only varies with the condition of local irritation, but also with plethoric conditions of the general system.

The chronic engorgement of these vessels may also be, as Mr. Lenox Browne states, "symptomatic of mitral insufficiency or of severe hepatic derangement or even of cerebral lesion."¹ The veins of this region are frequently found so much dilated as to be really varicose, and sometimes to approach a hæmorrhoidal condition. The frequent occurrence of the spitting of blood by persons having an irritable throat, is due very often to small ruptures or leakages of these distended and weakened vessels.

It is very common to find hypertrophy of the glandular tissue and enlargement of the vessels at the base of the tongue associated with a similar

condition of the faucial and pharyngeal tonsils, and also with a chronic follicular pharyngitis. The symptoms of hypertrophy of the lingual tonsil in many respects resemble those produced by hypertrophy of the faucial tonsil. It has a marked interference with phonation, producing a guttural intonation, as if an obstruction existed in the throat. In the effort to overcome this obstruction, the patient soon experiences the sensation of vocal fatigue.

The glandular hypertrophy at the base of the tongue is frequently the cause of the great variations from day to day in the singing voice, and is the reason why some singers are able to sing in a clear voice only after a period of rest. I have observed this condition to be the cause of a number of cases of vocal failure in singers, due, as has been observed by Dr. Holbrook Curtis,² to direct mechanical obstruction to the free opening of the epiglottis or to a reflex action exerted on the motor laryngeal nerves. The epiglottis, in these cases, is not only greatly hindered in its movements, but the irritation of its upper portion I have observed to be the cause of many cases of chronic laryngeal hyperæmia and hoarseness, and also of peculiar spasmodic and persistent coughs, as has been observed by Dr. Rice.³

This condition of glandular enlargement is also sometimes the cause of bronchial irritation and asthma.

The sensation experienced by the patient is that of fulness, or of a foreign body in the throat, as for example, some short substance, or a hair; some patients liken it to a rag or a piece of thread, and they are continually trying to get rid of these apparent obstructions by the effort of hawking, or swallowing.

These glands are also subject to frequent exacerbations of acute or subacute inflammation, as is the case with the faucial tonsils; and this condition is the cause of dysphagia and pain in the throat extending up the sides of the throat to the ear, as observed by Dr. Glutsmann.⁴

The condition known as "globus hystericus," frequently observed in females, was first demonstrated by Mr. Lenox Browne to be due to a condition of engorgement of these glands and blood-vessels at the base of the tongue, which may become enormously engorged by the reflex irritation of uterine or ovarian disorders. (Compte-Renau, *Congress International de Laryngologia*, Milan, 1880, p. 48.)

The diagnosis of these diseased conditions is very easily made by drawing the tongue forward with a napkin and inspecting the base of the tongue by the aid of the laryngeal mirror.

In the treatment of this condition we have two primary objects to be accomplished: first, the

² *New York Medical Journal*, Nov. 8, 1884, Vol. x1, p. 510.

³ *The Medical Record*, New York, May 1, 1886, Vol. xxix, p. 493.

⁴ *Medical Record*, New York, Dec. 17, 1887, Vol. xxxii, p. 757.

¹ *Medical News*, Philadelphia, 1887, Vol. li, p. 443.

removal of all the tissue that has become hypertrophied; and, second, the obliteration of varicose or distended blood-vessels.

The removal of this tissue is quickly and most easily accomplished by simple abscision with a curved knife, or a pair of curved serrated scissors, cutting it down to its normal level. This operation is usually attended by very little bleeding, the tongue heals quickly, and with but little soreness. In cases in which the tissue can be readily engaged in the loop of a cold wire snare, this method of removal I have also found to be very excellent.

The galvanic cautery is also very useful in cases where this enlarged tissue is much flattened and where it is unusually vascular.

Corrosive substances are also recommended, as chromic acid, nitric acid, mono-chloroacetic acid, Vienna paste, fused nitrate of silver, etc. In conditions of a very moderate amount of hypertrophy, two or more applications of these stronger caustics may be sufficient to remove all the tissue desired. But when any great amount of hypertrophy is present, their employment is as unadvisable as they ordinarily are in the same condition of hypertrophy of the faucial tonsils, since applications of these substances have to be repeatedly made in order to produce the desired amount of destruction of tissue, and the patient is subjected to an amount of pain and discomfort that would seem almost unwarrantable when the tissue can be removed in mass by simply cutting it away.

In those cases in which it is desirable to remove the hypertrophy with the galvanic cautery, there are three methods of doing it. The first is to destroy the whole growth by burning it away with a flat cautery point from the summit downward; the second is to cut it off at the base with an ordinary cautery knife; the third method is to transfix the growth through the base, by means of a very slender cautery point.

For the destruction of the enlarged blood-vessels or varicose veins, the galvanic cautery point is the instrument to be employed, and we can accomplish the same result by no other method with so much ease and precision. A slender cautery point should be used, and this should be applied longitudinally to the trunk of the vessel to be obliterated. It is desirable in the destruction of these vessels to obliterate them as near as possible to the point where they arise; it is, however, often necessary to obliterate them at different places for the reason that they so frequently anastomose with each other.

Before attempting any of these operations, however, cocaine should be thoroughly applied. It removes the sensibility of the part, and at the same time it is a marked hæmostatic, as it also is in operations on the faucial tonsil.

Accompanying the removal of these abnormal

tissues at the base of the tongue, attention should be directed to the general conditions of the system, which may have been the predisposing or exciting cause of the local disorder.

DR. J. SOLIS-COHEN objected to the term tonsil as applied to collections of lymphoid tissues other than those existing between the arches of the palate. He highly approved of the writer's method of getting rid of large masses with curved serrated scissors. In cases of slight enlargements he found solutions of creosote in carbolic acid and iodine in glycerine sufficient topical treatment. He would state that in the majority of cases seen by him, and they are counted by hundreds, he found no abnormal dilatation of the veins except in cases of very marked hypertrophies.

DR. GREEN V. WOOLEN, of Indianapolis, said: I am pleased that Dr. Cohen has called attention to the use of the term tonsil, because it relieves me from reproach for saying at my home that there is no such thing anatomically as a tonsil. When once it is known that such is the case we will be free from annoyance and opposition when we desire to remove them. My statistics show that less than 50 per cent. of diseased throats have tonsils and frequent observations show them rare in those not claiming to have diseased ones.

DR. J. ROE, after the discussion of his paper, said: If I were the author of the term tonsil, as applied to the collections of glandular tissue in the throat, I would gladly comply with Dr. Cohen's desire to have the term stricken from our nomenclature. In my paper I have simply stated that the collection of glandular tissue at the base of the tongue is sometimes called the lingual tonsil because of its identity in function and structure with the faucial tonsil. The term tonsil has doubtless been adopted because it is short and easy to use, and at the same time designates the part referred to just as clearly as the longer and more scientific term.

Regarding the statement made by Dr. Woolen, which has already been made by Dr. Bosworth, that normally there are no tonsils, that the enlargements we call tonsils are in reality abnormal conditions. This statement is in the main true. Normally the collections of glands at these points are not noticeable on inspection of the throat, and, therefore, no tonsils appear to exist. Notwithstanding this the same number of mucous and lymph glands are found in these regions as when the tissue composing these glands have become more or less hypertrophied or enlarged by disease.

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FIVE HUNDRED DELIVERIES WITHOUT DEATH IN THE PRESTON RETREAT.

Read in the Section of Obstetrics and the Diseases of Women, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY JOSEPH PRICE, M.D.,
OF PHILADELPHIA.

In making this report I desire to call attention to the accommodations of the Preston Retreat, and its routine treatment of puerperal cases, rather than make a minute analysis of a large number of cases.

The 500 cases reported date from the last death occurring in the Retreat, more than five years ago, and include 275 confinements under Dr. Goodell's care before his resignation as physician in charge. The series had extended to nearly 600 cases before the first death occurred, during my service as physician in charge. Between these deaths there has not been a case of puerperal septicæmia in the institution. Both of these deaths being from puerperal eclampsia in patients suffering from chronic Bright's disease.

The Retreat is a maternity hospital endowed by the will of Dr. Jonas Preston to furnish accommodations for poor, respectable, married women during their lying-in period. The building, standing in an open square of ground, is especially adapted to its purpose. Lying-in wards are entirely shut off from the main building; the delivery rooms, the closets and bath-rooms. The bath-rooms and water-closets are placed in towers at the rear of the building. The plumbing is as nearly perfect as modern sanitary science can make it.

Verandas, enclosed in glass, form large, light, airy corridors about the sides and rear of the building, and furnish a distinct circulating atmosphere between the house proper, the wards and the water-closets.

Wide corridors run through the main building at right angles. This arrangement, together with that of the flues and heating apparatus, makes the ventilation of the entire building simply perfect. The building is heated by the indirect steam method.

The great success attending the work of this maternity is due to the strict enforcement of the law of cleanliness. Cleanliness, water, soap and pure air are still the best antiseptics. Everything and everybody is clean, and jealously kept so. The routine treatment of patients is as follows:

The patient on entering the house is given a hot soap bath, dressed in clean clothing and assigned a clean bed in the waiting ward. If necessary, a laxative is given and the bowels are kept soluble during her waiting period. Thereafter until her confinement she is obliged to take at least two hot soap baths per week and wear clean clothing. She is allowed to do such light work about the house as the physician may deem advisable and is encouraged to take as much open air exercise as circumstances will permit. Every

effort is made by the officers and employés of the institution to make it as cheerful and homelike as possible. When ready for the delivery room, the patient is again given a hot soap bath, also an enema and vaginal injection of a 1 to 2,000 solution of bichloride of mercury in distilled water. She is clothed in a clean night-robe and drawers and placed upon a new, clean delivery bed. Scrupulous cleanliness is observed in all manipulations of the patient, and after delivery a second vaginal injection is given and a vaginal suppository of iodoform is introduced.

The patient's person is carefully cleaned, all soiled clothing removed, the binder and pad applied, a clean set of night clothes put on, and the patient is put in a new, clean bed in the ward. All soiled articles are immediately removed from the delivery room and a new bed made up for the next patient.

The patients in the ward are carefully observed by the nurses, but no unnecessary handling or interference permitted; they remain in the ward until they are able to be up, when they are removed to the convalescent ward. As the ward is emptied, the beds are burned and all bedding most carefully cleaned.

No soiled linen (as draw-sheets, diapers, napkins or other articles) is allowed to remain in the ward; but when soiled is immediately placed in a covered receptacle and removed from the building. No sponges, wash-rags or absorbent cotton are used in the house. Corrosive jute supplies the place of these articles, being clean, soft, remarkably absorbent and cheap. It is destroyed immediately after being used. The pads to absorb the lochia are also of jute and likewise destroyed. The beds in the ward are of fresh rye straw and are burned after ten days. All discharges from the delivery room are immediately burned; all bedding soiled beyond cleansing or contaminated by purulent or specific discharges is likewise burned. In short, every effort is made to keep the house perfectly pure and sweet.

The arrangement of the building permits of rotation in the use of the wards, so that a ward once emptied is not again used until three others have been filled. In the meantime it is most carefully cleaned and thrown open to the atmosphere. A similar system is pursued in the convalescent wards and delivery rooms.

In the 500 labors reported, there were 200 primiparous mothers. The complications were as follows: There were 52 forceps deliveries, most of them for contracted pelvis and large, hard heads; 3 induced labors; 3 cases in which podalic version was performed; 2 cases of missed labor; 1 case of congenital absence of the right leg of the mother (a normal delivery); 1 case of placenta prævia; 12 still births; 3 twin labors; 5 breech presentations and 1 face presentation. Other statistics are omitted purposely.

TUBERCULOSIS OF BONES AND JOINTS.

*Read before the Chicago Medical Society,*BY CHRISTIAN FENGER, M.D.,
OF CHICAGO, ILL.

History.—The tuberculosis of bones and joints form anatomically and clinically a unit, because the tuberculosis of the bones usually extends to the joints, and derives from the affections of the latter the main clinical features.

Our knowledge of this branch of tuberculosis is only twenty years old, commencing at the time when Karl Küster called attention to the frequent occurrence of miliary tubercles in the fungous granulations of the disease then known as white swelling. Soon afterwards Friedländer, Hueter, and especially Volkmann and König, not only verified Küster's statements, but carefully studied anatomically, clinically and experimentally this form of local tuberculosis. This naturally attracted the universal attention of the profession, so that an extensive literature of the subject quickly sprang up—so quickly, indeed, that even before Koch's discovery of the bacillus tuberculosis, in 1881, the tuberculosis of bones and joints was already well established as a distinct form of disease. So much was this the case that Volkmann, at the German Surgical Congress in 1885, was able to state that all cases of the hitherto so-called paidarthrocacis, spina-ventosa, tumor albus, fungous and strumous arthritis, etc., belonged to tuberculosis.

Etiology.—Tuberculosis of bones and joints is evidently always a secondary invasion; that is, the place of primary invasion of the bacillus must be elsewhere in the body, and one or more dépôts must exist in the lungs or lymph glands before so deep-seated localities as the bones and joints can be invaded. When, therefore, authors speak of primary tuberculosis of the bones and joints, it is only a clinical term and means that clinical examination, or even the autopsy, fails to reveal the place of invasion, the primary dépôts. As a clinical distinction its importance lies in the fact that if tuberculosis is practically localized to a joint, the patient's life is not in danger from deposits in other organs, and the total removal might prove efficient to extinguish the disease.

In this sense a primary, or, to use the more correct expression, a localized articular and osseous tuberculosis, is, according to Kümmer, found in about 40 per cent. of the cases. In the remaining 60 per cent., dépôts are found at the same time in other organs of the body. The lungs come first with 25 per cent.; other joints, 10 per cent.; bones, 10 per cent.; glands, 10 per cent.; peritoneum, 3 per cent.; pleura, 2 per cent.

The presence of the bacillus of tuberculosis in a body is the *condition sine qua non*, and may be aided by other etiological elements, the most important of which is traumatism. Max Schüller

proved experimentally in animals infected with tuberculosis (for instance through the respiratory tract) that a slight traumatism to a joint would determine the localization of the bacillus tuberculosis, by way of the circulation, to the place of traumatism, and that a tuberculous synovitis or panarthritides would follow.

Clinically the tuberculosis of joints has been traced in 56 per cent. of the cases to traumatism, by a direct blow to a joint, or distortion, or over-exertion. It is characteristic that the traumatism is always slight; a severe trauma, causing intra-articular fracture, is very rarely followed by tuberculosis.

As a general characteristic of the articular and osseous tuberculosis it must be stated that it belongs to the benignant chronic forms of disease; that is, it lasts for years and years, has a tendency to spontaneous recovery, little tendency to generalization and, consequently, to the destruction of life, as compared with the acute forms of tuberculosis of the internal organs, or even the experimental inoculated tuberculosis.

An explanation of this clinical fact is given by Baumgarten, who distinguishes between three forms of miliary tubercles:

1. The lymphoid-celled tubercle, Virchow's small-celled tubercle, which is rich in bacilli, extremely malignant, and is found in tuberculosis miliaris acutissima, for instance in the lungs.

2. The mixed tubercle of lymphoid cells and epithelioid cells, which contains fewer bacilli, is less benignant, and is found in the more chronic forms of general miliary tuberculosis.

3. The epithelioid and giant-celled tubercle, with no lymphoid cells, containing comparatively few bacilli, more benignant, and found in the benign forms of localized tuberculosis, joints, bones, lupus and lymph glands.

That this benignancy of the tubercle can be dependent upon lessened vitality in the tubercle bacillus has been proven experimentally by the inoculation of artificially weakened cultures, which were seen to produce localized tuberculosis in the nearest lymph glands only, with no generalization (Baumgarten). Kümmer found heredity as an element in 37 per cent. of the cases.

Anatomy.—Tuberculosis has a distinct predilection for the medullary tissue of the bones; thus it is correct to speak of the tuberculous osteo-myelitis as a first effect of the arrest of bacilli in some place of the medulla. The anatomical condition of the vessels in this tissue, thin walls, slight contractility and sluggish circulation, favor the implantation on the vessel wall, in the same way as pus microbes are localized in acute osteo-myelitis.

Embolism from foci in the lungs opening into the pulmonary veins may cause a tuberculous infarction of the bone. The interesting experiments of Müller, who injected pus from a tuber-

culous. abscess into the nutrient artery of the long bones of goats and rabbits, have proven that this is a possible origin of local osteo-tuberculosis.

The seat of the tuberculosis in bones is usually in the cancellous substance of the epiphysis of the long bones, the short and flat bones, and very seldom, the medulla of the shafts. The only exceptions to this are the shafts of the phalanges of the fingers and toes, and the metacarpal and metatarsal bones in children, where the tuberculous osteo-myelitis gives rise to the well-known spina-ventosa of the old authors.

The frequency of the localization in the different bones of the body is given by Schmallfuss, as follows :

Billroth.	Jaffe.	Per cent.	Schmallfuss.	Per cent.
Vertebra	Vertebra	26	Knee	23
Knee	Foot	21	Foot	19
Cranium	Hip	13	Hip	16
Face	Knee	10	Elbow	9
Hip	Hand	9	Hand	8
Sternum-Ribs	Elbow	4	Vertebra	7.5
Foot	Pelvis	3	Tibia	4
Elbow	Cranium	3	Cranium	4
Pelvis			Pelvis	3.6
Tibia and Fibula	Sternum, Clavicle and Ribs	3	Sternum, etc.	3.6
Femur	Shoulder	2	Femur	1.9
Shoulder	Femur	1	Shoulder	1.5
Humerus	Tibia	1	Ulna	1.4
Ulna	Fibula	1	Humerus	1
Radius	Humerus	1	Radius	0.7
Scapula	Scapula	0.6	Fibula	0.5
	Ulna	0.6	Patella	0.1

The gross appearances of the osteo-tuberculosis as it is found in the articular extremities of the long bones are well described by König under the three following forms: (1) The granulating focus; (2) the tubercular necrosis, and (3) the tuberculous infarct, the diffuse tuberculous osteo-myelitis.

1. *The granulating focus* is found as single or multiple, round or cylindrical cavities, from the size of a millet seed to that of a pea or hazelnut, and contains either grayish-red, soft, living granulation tissue, or, if coagulation necrosis has taken place, yellowish-gray cheesy matter or liquid tuberculous pus. Fine spicula of bone may be felt with the finger, or when smaller, seen with the microscope in the contents.

The granulation tissue contains epithelioid and giant-celled tubercles and bacilli. The wall of the cavity is either soft, when rarefying osteo-myelitis has taken place, significant of destruction and extension; or sclerotic when an osteo-plastic osteo-myelitis surrounds the focus, showing a tendency to localization and cicatrization. As little as this form of osteo-myelitis has in common with the usual form of acute osteo-myelitis due to pus microbes, with its extensive area of inflammation and large sequestra, still it may be difficult to distinguish it from the more rare form of sub-acute multiple osteo-myelitis of the epiphysis, in which multiple foci of similar form are found. But the infectious osteo-myelitis has thin

yellow pus and flabby granulations without tubercles, and the pus contains pus microbes.

2. *The tubercular necrosis.* When the area of the tuberculous osteo-myelitis is larger than a hazelnut, the bone is usually not absorbed, but remains as a sequestrum in the cavity. This sequestrum is sometimes osteo-sclerotic, sometimes osteo-porotic, sometimes like the surrounding bone, according to the character of the osteo-myelitis previous to the interruption of nutrition. It is yellowish-white or grayish-red, according to the contents of the Haversian canals or medullary spaces of dead or living tuberculous tissue. It may be separated from the wall of the cavity by a layer of tuberculous granulation tissue, or dry cheesy matter, or tuberculous pus. If separated by a layer of granulation tissue, this may be so thin that the sequestrum fits the cavity exactly, and, if its shape is irregular, fits in so immovably that it takes a good deal of force to pry it out by the gouge and chisel.

3. *The tuberculous infarct* has the characteristic conical shape of infarcts in other parts of the body, with the apex in a proximal and the base in a distal direction. It represents the territory of an artery and suggests embolism. Large infarcts, then, must require either a larger embolus, or, in addition to the embolus, arterial thrombosis, from the place of arrest of the embolus. Their seat is usually a little inside of the cortical substance of the bone; thus, they may be overlooked if the bone is not sawn through. If, as in the specimen here presented, the base takes in the articular surface of the joint, this surface will be ground off and polished, signifying instantaneous death of the infarct at the time of the embolism.

The line of demarcation forms slowly as a furrow surrounding the dead area, the central portion of which may remain in connection with the living bone for a long time, a year or more, even in a joint apparently on the way to recovery.

The smallest sequestra, in the dry forms of tuberculosis with a tendency to cicatrization, may heal in or be imbedded in the non-tuberculous cicatricial tissue, remaining after the tuberculosis has come to an end and incomplete recovery taken place, without perceptibly disturbing the function.

The fate of the osteo-tuberculous foci varies according to the activity of the microbe and the size of the focus. The smaller granulation foci in the dry forms of tuberculosis may result in either complete recovery by removal of the tuberculous elements by absorption and filling up the cavity with cicatricial tissue, or in incomplete recovery, in which part of the focus is transformed into cicatricial tissue, in part of which dormant bacilli remain. These are apt to be revived under favorable circumstances, of which a fresh culture fluid from a traumatism is the only one known.

In the joints, however, this is a very common occurrence, as we shall see later on. This accounts for the local relapses so frequent in tuberculosis as to make a permanent recovery almost impossible.

Small sequestra may, as stated above, disappear by absorption, or be included in the cicatricial tissue. Large sequestra will, of course, neither be absorbed nor be included in a cicatrix. Moreover, they furnish an inexhaustible depôt of bacilli and keep up the local tuberculosis on its progressive way to further destruction.

We have hitherto considered the osteo-tuberculosis at its place of origin in the bone, where it is of comparatively little importance, since so long as it is confined to the bone it gives rise to little or no functional disturbance. We shall now follow it on its extension beyond the bone, and then distinguish between its extension to the periosteum and the soft tissues on the one hand, and to the joints on the other. It is not until the tuberculosis has extended to one of the places named, that its symptoms become manifest and the grave consequences to the patient's welfare take place.

1. *Extension to the periosteum outside of the joints.*—It is characteristic of tuberculosis that the periosteum, on the whole, is rarely affected to any great extent. We do not find, as in acute osteo-myelitis, a diffuse infiltration of the periosteum and the formation of extensive masses of bone. Tuberculosis of the periosteum is localized in the joint in the same way as in tubercular osteo-myelitis, and the place of perforation limited to a small area surrounded by normal periosteum, with little or no thickening or enlargement of the bone affected. When the dry granulating form of tuberculosis reaches the periosteum a small, soft, elastic, limited granulation tumor forms, first under the periosteum, then outside of it. It is characterized by slow growth, comparatively little pain, slight tenderness, and a tendency to remain stationary for a long time. It is different with the soft suppurating tuberculosis, which, although it also breaks through the periosteum in a limited space, acts in an entirely different way as soon as it has reached the para-periosteal loose, connective-tissue spaces. Here it has a tendency to extend rapidly and to form large abscesses, the so-called cold abscesses, traveling, like all other abscesses in connective tissues, in the direction of least resistance. On its way from the deep para-periosteal tissues out toward the skin, it forms large or small abscess cavities and finally breaks through to the surface, after having transformed the skin into tuberculous tissue, which sometimes presents the appearance of lupus at the place of perforation. No conclusion can be drawn from the size or acuteness of the abscess as to the extent of the osteo-tuberculosis. A large abscess may come from a small focus in the bone, and *vice versa*.

The question has arisen whether the rapid formation of tuberculous abscesses is not the consequence of a mixed infection from auto-infection of pus microbes. It must be said that such auto-infection is rare, as the pus in these abscesses is found on microscopical examination and culture in culture substances, not only not to contain pus microbes, but its inoculation in the camera anterior of the eye, or the abdominal cavity of animals, produces an unmixed tuberculous invasion and no supuration.

Diffuse tuberculous osteo-myelitis.—This form is rare. On the cut surface of the bone we find large, irregular, often multiple areas and islands, with no tendency to definition, of a yellowish-white infiltration, containing small multiple foci of liquid pus. Here is no tendency to limitation or the formation of sequestra, but rather a tendency to spread indefinitely and to invade even the medullary tissue of the shafts. This form has in common with the acute diffuse osteo-myelitis that it will spread through the Haversian canals diffusely to the periosteum and cause a diffuse plastic periostitis with irregular diffuse masses of bone formed on the outside of the cortical substance. Consequently it resembles, in its clinical features, acute osteo-myelitis. Locally and generally it is a severe form: locally it forms an extensive tuberculous depôt, from which abscesses may form indefinitely; generally, patients with this form are exposed to the dangers of a fatal general tuberculosis if the whole depôt is not removed in time. In operating it is important to recognize this form, since it requires more radical measures, either amputation or very extensive excision. As a rule, the mere removal of the periosteal tuberculous masses and the diseased medullary tissue is insufficient, and the whole continuity of the bone must be taken away, as in the specimen here presented. Fortunately this form is extremely rare.

Tuberculous abscess.—In addition to what has already been stated about the tuberculous abscess I shall here briefly call attention to the main characteristics of its wall, which is formed of a thinner or thicker layer of tuberculous granulation tissue thickly studded with the characteristic miliary tubercles of the benignant type, with relatively few bacilli. This tuberculous pyogenetic membrane, as it was called by the old authors, is only very loosely connected with the surrounding tissues and organs, in the spaces between which it is located. So loose is the connection that, when the abscess is opened, the whole membrane can be wiped off the wall with a sponge, or, when more firmly attached, easily removed with a sharp spoon, leaving the walls so healthy as to readily unite by first intention when brought together; hence the modern treatment of these abscesses by incision of the whole length, removal of the wall, and reunion. In

rare instances, however, a fascia, for instance the fascia lata of the femur, may be diffusely infiltrated, even to such a degree as to cause diffuse necrosis, presenting the appearance of diffuse phlegmonous inflammation. In such cases careful removal, by the knife and scissors, of the whole area involved is required.

At this place I will call attention to the latest step in the conservative treatment of large tuberculous abscesses, especially the large psoas abscesses from tuberculosis of the vertebral column from Pott's disease. It is well known that the opening of these abscesses in *præ*-antiseptic times was almost always followed by a fatal septic infection from without. The modern opening and drainage under antiseptic precautions, so much praised in the beginning, has been proven not to be without danger, inasmuch as, in many cases, late infection has taken place when, after months, the inclosed fistulous openings have been guarded with less stringency in the application of antiseptic dressings.

Thus, two years ago, Bruns, in Tübingen, proposed a return to the older subcutaneous method, namely aspiration; but, in addition to this, injection into the emptied abscess cavity of a 10 per cent. iodoform emulsion in equal parts of glycerine and alcohol, this procedure to be repeated every four to six weeks. Usually, after three or four aspirations, the formation of pus in the abscess cavity ceases, the fever stops, and the patient regains health and strength. No iodoform poisoning from this treatment has yet been reported.

2. *Extension into the joints.*—The osteo-tuberculous foci in the epiphyses of the long bones are situated so near to the surface of the joint that, when they come to the surface, in an overwhelming majority of the cases, they will be inside of the articular cavity; the bacilli of tuberculosis are consequently poured into the joint, and a tuberculous synovitis or arthritis is the result.

Tuberculosis of joints is by far the most common joint disease, so much so that König states that, in the surgical clinics, the surgeon will have 100 cases of tuberculosis of the joints to deal with to one of the other classes of inflammation, such as gonorrhœal, syphilitic, septic, osteomyelitic, rheumatic, or the metastatic inflammations subsequent to acute infectious disease. Although the statement may seem to the general practitioner to be carried to the extreme, still the authority of König is sufficient warrant for the statement that tuberculosis as a cause of joint disease far exceeds all others, and that the tubercular arthritides are the everyday cases of the surgeon.

We distinguish, as to origin, between primary synovial and primary osteal tuberculosis of the joints. Max Schüller stated, as a result of experiments, that a slight injury to a joint in a per-

son who had bacilli floating in his blood would determine localization, commonly in the form of a synovial tuberculosis. It may be said here that, as to the relative frequency of the two forms, it has been shown that the primary osteal tuberculosis occurs two or three times as often as the primary synovial. As far as the course and development of the articular tuberculosis is concerned, the difference in origin makes little or no difference—so little, indeed, that we are unable to make a differential diagnosis, even from the symptoms.

As to the primary osteal tuberculosis of the joints, we have already seen that an osteo-tuberculous infarct is located in the joint from its very beginning, while the smaller granulation foci open into the joint secondarily. When located close to the articular cartilage, this must be destroyed before the joint is invaded, the cartilage forming a barrier which may sometimes prove sufficient to resist invasion. A small dry granulation focus may heal up before perforation takes place.

When located at the surface of the joint, where the bone is not covered with articular cartilage, the thin periosteum and the serous membrane covering it are more easily opened through. An important complication is when an osteo-tuberculous focus is placed right at the insertion of the capsule of the joint. It may then open in and outside of the joint simultaneously, or the one or the other, the saving of the joint depending upon the few lines of difference. When the tubercle bacillus invades a joint and tuberculosis of the joint ensues, all the constituent parts of the joint will be successively affected, namely, the synovial membrane, para-synovial tissue, ligaments and peri-synovial tissues, the articular cartilage, and finally the articular surface of the bone.

It is a question whether so light a form of inflammation as a simple synovitis (whatever that may be), as mentioned by Kümmer, can set in as an effect of either ptomaines alone, from a near focus, or from extremely weakened tubercle bacilli. A simple serous synovitis of entirely benign character, if it exist, is of extremely rare occurrence.

Commonly the presence of the tubercle bacillus in the joint produces one of the following forms:

1. A pannous hyperplastic synovitis. 2. A tuberculous hyperplastic synovitis or papillomatous plastic synovitis. 3. A granular or fungous hyperplastic synovitis (Hueter); and, 4. The tuberculous articular empyema (König).

1. *The pannous hyperplastic synovitis (Hueter).*—The synovial membrane is moderately thickened. From the border of the cartilage a thin vascular layer of granulation tissue creeps in over the surface of the latter, so much so as to sometimes cover the larger part of the surface

and unite with the cartilage, which gradually becomes transformed into connective tissue. The tubercles are usually not visible to the naked eye.

2. *The tuberos plastic synovitis, or circumscribed nodular tuberculosis of the synovial membrane.*—The tubercular fibroma is characterized by the development of a subserous tumor the size of a walnut or larger, protruding into the joint and filling, for example, the supra-patellar recess of the knee-joint, with simple synovitis or pannous synovitis in the rest of the cavity. Such a local tuberculosis is amenable to extirpation of the tuberculous tumor followed by recovery. The papillomatous plastic synovitis is a diffuse form of hyperplastic tuberculosis, and, as shown in the specimen, we find the whole inner surface of the synovial membrane covered with sessile or pedunculated papillomatous growths, small and rather uniform in size, some of which may become detached and constitute the so-called rice bodies.

3. *Diffuse granulating synovial tuberculosis.*—Here the synovial membrane is considerably thickened, hyperæmic, with or without visible tubercles, always accompanied by invasion of the para-articular tissue and the ligaments of the joint. Thus is formed the thick œdematous mass of tissue, usually of a gelatinous appearance, in which coagulation necrosis will cause, in the more dry forms, islands of cheesy matter; in the more liquid forms, islands of pus, that is, small multiple abscesses.

Any of the above named forms of synovitis may give rise to the exudation of serous or sero-fibrinous fluid in the joint, the tuberculous hydrops of König. A considerable hydrops is most commonly associated with a diffuse synovial tuberculosis, with little thickening of the capsule. Less commonly it is found in the tuberos and papillomatous synovitis; most rarely in the fungous or granulating synovitis. The fluid is clear in the lighter forms; slightly milky from migratory corpuscles, or mixed with shreds of fibrin in the severer forms. So-called rice corpuscles may be found and derived either from islands of fibrin or from loosened papillomata. Their presence indicates tuberculosis (Reidel).

4. *Empyema articulationis tuberculosum. Cold abscess of the joint (König).*—The inside of the capsule is covered with loosely adherent tuberculous membrane similar to that in tuberculous abscesses, so loosely connected with the capsule as to permit of its being scraped off. The remaining synovial membrane is diffusely infiltrated with miliary tubercles, but only slightly thickened, if at all, because of the non-invasion of the para-synovial tissues.

The articular cartilage plays, as a rule, only a passive part in tuberculosis of the joint, as its fate is destruction or absorption. The cartilage covering a large sequestrum dies off and is me-

chanically detached from the bone in smaller or larger pieces. An osteo-tuberculous focus, when reaching the cartilage, will cause gradual local absorption, and a local, usually round defect, through which red granulation tissue or cheesy matter protrudes. The surrounding cartilage may be entirely normal and efficient for the function of the joint. A primary synovial tuberculosis has a tendency to develop most intensely in the region of the capsule at the circumference of the articular cartilage. From here it has an easier way down into the vascular bone than into the non-vascular cartilage, and extends down between the bone and the cartilage as a tuberculous osteo-myelitis, creating a layer of tuberculous granulation tissue that will detach the cartilage from the bone. Local hyperplastic foci in this granulation tissue may perforate the cartilage in many places, just the same as a primary osteo-tuberculous focus, so that the cartilage presents the appearance of a sieve. Finally either the whole cartilage or shreds of it are found loose in the cavity of the joint.

In the pannous synovitis and the dry forms of fungous synovitis an apparently direct transformation of cartilage into connective tissue takes place.

The articular surfaces of the bone, after the disappearance of the cartilage, present the following appearance: In the dry form, a layer of not very vascular connective tissue covers the surface and connects it with the opposite similarly transformed surface. In the more moist and suppurating forms, a layer of miliary tuberculous tissue covers the bone with visible, yellow miliary tubercles, extending usually only a short distance down from the surface. Thus the whole head of the femur, the acetabulum, etc., is gradually destroyed.

SYMPTOMS.

I. *Tuberculous Hydrops*, as we have stated, is common in the diffuse synovial tuberculosis with little swelling of the capsule, also in the papillomatous diffuse synovitis or local tuberos synovitis, but is seldom found in the granulating fungous synovitis. It is characterized by the usual symptoms of a painless intra-articular accumulation of fluid which usually reaccumulates when removed, and sooner or later, the tuberculosis going on, shows some thickening of the capsule after removal of the fluid.

The prognosis is relatively good because there is little tendency to destruction of the joint or to suppuration. Some cases recover after puncture and rest. Rice bodies, when present, can be felt to give a peculiar friction sound when moved from one point of the joint to another. The joint remains for a long time in relatively good function which only ceases when, later on, thickening of the capsule and destruction of the joint sets in.

A tubercular fibroma can be felt after the aspiration of the joint as a sessile, more or less movable tumor, simulating floating cartilage. Simple arthrotomy and extirpation may prove effectual. The tuberculous hydrops is never accompanied by fever. As above stated, the lighter forms may recover by aspiration and immobilization. More obstinate forms require opening of the joint, excision of the local tumors if found, a partial excision of portions of the capsule with iodoformization and drainage. König has opened the knee-joint on both sides of the patella, excised large slices of the capsule, and seen perfect recovery. However, the result is always uncertain, and the tuberculosis may in spite of initial, more conservative treatment, go on to the severe and more destructive forms, and require more radical operative measures.

II. *Fungous Arthritis, Granulating Synovial Tuberculosis, White Swelling, Tumor Albus*. This is by far the most common form of tuberculosis of the joints, whether primary osteal or primary synovial. No symptoms enable us to make a distinct diagnosis between a primary osteal and a primary synovial tuberculosis of the joint, but as we stated in the discussion of tuberculosis of the bones, the primary osteal form is the most common. In the knee, the proportion of the primary osteal to the primary synovial form is as three to one; in the hip, four to one; in the elbow, four to one (König). As to age, the proportion is in children below 15, two to one; above 15, three to one. If it were possible to know that a large osteo-tuberculous focus was to be found in a given case of articular tuberculosis, this knowledge would determine an immediate operation, and no time would be lost by conservative treatment. But unfortunately, as yet the diagnosis is almost impossible.

The fungous arthritis is much more frequent in the lower than in the upper extremities. According to Albrecht, out of 325 cases, of which he gives the statistics, 91 were found in the joints of the upper extremity, and 234 in those of the lower extremity. The granulating synovitis or fungous arthritis presents a great variety of clinical forms, according to the acuteness of the onset and the course; slowness or rapidity of destruction, and extent of the infiltration of the synovial tissues. It is especially the degree of peri-articular infiltration, its almost entire absence, or presence, in abundance, that makes the clinical distinction between the dry and soft forms so characteristic that Volkmann has called attention to the former as a distinct class of cases.

1. *The dry granulating tuberculosis, the atrophic form, plastic synovitis* (Kümmer), *caries sicca* of Volkmann, so common in the shoulder-joint is characterized by the tendency of the tuberculous tissue to cicatrization, and slight ten-

dency to extensive destruction of cartilage and bone. Absence of invasion of para-articular tissues results in only a slight or in no swelling in the region of the joint, which may even be found atrophic, as in the shoulder-joint from atrophy of the muscles, or in the hip-joint in young individuals (König); more rarely in the knee. In the shoulder-joint there may be considerable atrophy, and still so much mobility that the disease may simulate a neurosis resulting in atrophy of the muscles of the joint. A careful examination *in narcosis*, revealing restriction of mobility from cicatricial contraction of the tuberculous capsule, will enable us to make an early diagnosis, which is confirmed later on when peri-articular abscesses form. In a majority of cases, however, this form has a tendency to come to an end without the formation of abscesses, terminating simply in a more or less restricted mobility of the joint. Dry caries of the shoulder-joint is found not infrequently in young women (König).

2. *Fungous arthritis, tumor albus, synovitis fungosa sive granulosa*, is probably the most common of all the forms of articular tuberculosis. It is characterized by the softer condition of the tuberculous granulation tissue, with tendency to destructive invasion of all the elements of the joint, coagulation necrosis and liquefaction. The invasion of the para-articular tissues causes considerable swelling in the region of the joint, giving to the latter the characteristic spindle-shape so frequently found in the knee, elbow and ankle-joints; the swelling being so much the more apparent when atrophy of the muscles above and below has taken place. Extension of the infiltration from the para-articular tissues out towards the subcutaneous tissues finally causes the swollen joint to be covered with a whitish, immovable, dense skin, giving the joint the appearance from which the time-honored name of white swelling is derived. In the beginning of the disease a slight degree of hydrops is found in a few cases; most often the cavity of the joint contains no fluid, or not a sufficient amount to be recognized by palpation. Later in the disease liquefaction in the islands of coagulation necrosis in the islands of soft granulation tissue gives rise to the presence of tuberculous pus. This may be found as small foci in the soft granulating capsule, small abscesses inside of the granulation tissue, or as pus from the cavity of the joint. At this stage of the disease, especially in the softer form of tuberculosis, the peri-articular abscess is formed. Most commonly a local destruction of the tuberculous capsule facilitates the invasion of the peri-articular inter-muscular spaces by the tuberculous pus already contained in the joint; and a more or less rapid increase in size of the abscess cavity in the direction of least resistance, causes the formation of more or less distant ab-

cess cavities, which of course, always lead into the cavity of the joint. More rarely, peri-articular abscesses form directly from an osteal focus by the extension of a mass of tuberculous granulation tissue, extending through the capsule out into the peri-articular tissue, as a primary mass of solid granulation tissue in which liquefaction takes place secondarily. A peri-articular abscess originating in this way may attain the same size as that previously mentioned, but owing to its original form a local osteo-tuberculous focus is of less prognostic importance, inasmuch as it does not necessarily indicate suppurative destruction of the cavity of the joint. This latter form of abscess may be opened and evacuated and may then close up with or without the removal of the osteo-tuberculous focus and still leave the joint in a more or less unimpaired condition; while on the other hand, the peri-articular abscess communicating directly with the destroyed joint cavity has no tendency to come to a close, but leaves fistulous openings which keep open permanently, and only too often, when not protected by antiseptic dressings, sooner or later, furnish a place of invasion for pus microbes, adding acute supuration or sepsis to the tuberculosis, and giving rise to a rapid increase in the destruction of the articular surface.

A fungous arthritis, when limited to a single joint, will rarely cause any rise in temperature. High temperature is always indicative of a mixed infection with pus microbes, or what is very rarely met with, general acute tuberculosis. By far the most common is the mixed infection which comes from without, the pus microbes entering the open and unprotected peri-articular abscess. It is very exceptional that auto-infection, that is, invasion of a closed tuberculous joint by floating pus microbes from a distant place of invasion, takes place. A slight rise in temperature, remittent or intermittent, however, commonly accompanies the formation of tubercular peri-articular abscesses. A temperature of 100° to 101° in the evening with normal morning temperature is indicative of this complication, and this, as first pointed out by König, is an important diagnostic symptom.

Contractions, lateral deviations or other abnormal positions of the articular surfaces, usually signify destruction of the articular ligaments and articular surfaces. They are thus not seen in the articular hydrops, or the lighter forms of synovial tuberculosis, while we find them in tumor albus, or the destructive forms of para-arthritis. König very properly uses the term "destructions-contractur" (contraction by destruction), for these displacements, in preference to the usual term of spontaneous dislocations, and employs the latter expression to signify the condition when through muscular contraction or a slight injury to the joint, whose strengthening ligaments are destroyed, a sudden, very painful and often con-

siderable displacement takes place. This is especially common in the hip-joint. The clinical importance of any of these displacements lies in the fact that they signify a certain amount of destruction of the joint, thus often indicating surgical interference.

Pain as a symptom accompanying tuberculosis of the joint, although always present, is of extremely variable intensity; two patients with an apparently similar degree or form of tuberculosis in the knee-joint may differ so much as far as pain is concerned that the one may be able to walk almost without pain, while in the other, the slightest movement will cause intense suffering. Although the intensity of the pain does not give any absolutely certain information as to the extent of destruction of the joint, it may be said that in general, the more acute destructive forms of tuberculosis are the more painful, and further, that intense pain on movement may mean large intra-articular osteal foci, and extensive intra-articular destruction; while slight pain would indicate that the articular cartilage was as yet comparatively intact. A sudden attack of intense pain sometimes means that perforation of an osteal focus into the yet intact joint cavity has taken place. It is of more practical importance when we find a local painful spot on the articular extremity of the bone, especially when it is outside of the usual line of the swollen and tender capsule. Inasmuch as this may indicate an osteal focus if the tender spot shows some localized softness or swelling, it is of even more significance in this direction, and indicates a local operation which may save an as yet comparatively intact joint.

3. *Cold Abscess, the Pyarthrous Tuberculosis*, is rare. Its most typical form is found in diffuse miliary tuberculosis, and a less typical form, that is, less fluid in the joint, in the soft forms of granulating tuberculosis. The onset is usually acute, often with considerable pain accompanied by fever, so as even to simulate suppurative synovitis. There is a tendency to destruction of the capsule and the early formation of large peri-articular and inter-muscular abscesses. The symptoms of general acute tuberculosis are likely to set in sooner or later.

DIAGNOSIS.

As a rule there is no difficulty in the diagnosis of tuberculosis of the joints when the history, course and symptoms of the disease are taken into consideration, as above stated; but, as König justly remarks, it is well to remember that an articular tuberculosis even of the large joints, is practically a local disease, and has for a long time little or no influence on the general health of the patient. Thus we may find patients apparently strong and healthy-looking suffering from articular tuberculosis.

The hydrops tuberculosis is distinguished from a "common articular hydrops," whatever that may mean, traumatic, for instance, by its persistency and tendency to relapse as soon as the joint is put to use again. Flocculi of fibrin or rice bodies indicate tuberculosis.

The tubercular fibromas might be mistaken for lipoma arborescens or gummata. The diagnosis of the latter will be cleared up by anti-specific treatment, which should always be tried in cases of doubt.

Cold abscess is distinguished from the suppurating synovitis by less pain, some swelling of the capsule, and the frequent presence of tuberculosis in other organs.

The fungous synovitis or pan-arthritis rarely causes any difficulties in diagnosis. The elastic swelling, comparatively painless abscesses or fistulous openings with fungous granulation tissue protruding are characteristic. It can be distinguished from acute multiple osteo-myelitis of the articular surfaces by its slow and comparatively painless onset, and the slight tendency to ankylosis as compared with the latter.

The caries sicca of Volkmann, or dry cicatricial atrophic tuberculosis, especially as found in the shoulder-joint, might be mistaken for a neurosis with atrophy of the muscles covering the joint. An examination *in narcosis* will reveal some loss of mobility in the tuberculosis as compared with the absolutely free mobility in neurosis. Exact measurement may reveal some shortening, that is, articular destruction in the tuberculosis.

PROGNOSIS.

It is almost impossible in any given case of articular tuberculosis to state the future fate of the joint, inasmuch as the course of the tuberculosis is in the highest degree atypical. König states that all forms and cases of tuberculosis of bones and joints are capable of spontaneous recovery with more or less loss of function; but it may be stated as a general rule that the softer and more acute the tuberculosis, the larger the osteal foci, the earlier the suppuration and the less careful the early treatment, the more grave is the prognosis. An apparent recovery is always uncertain as to its duration, inasmuch as relapse or rekindling of the tuberculosis is likely to take place at any time. The articular tuberculosis usually extends over many years, especially the fungous pan-arthritis. The caries sicca may, according to König, come to an end in two or three years with some loss of mobility. Lighter forms of synovial tuberculosis or articular hydrops may disappear by proper treatment in a much shorter time.

As to the question when it can be said that recovery or disappearance of the tuberculosis has taken place, we may be guided by complete disappearance of the pain and swelling, and by the

painlessness of what mobility has been left in the joint. As has been stated before, complete ankylosis is rare, but when it takes place it gives this advantage, that the pain disappears, even when the tuberculous foci are left in the capsule or the bones.

As to the prognosis in different ages, it may be said in general that children will more easily recover even from a severe articular tuberculosis than adults—a fact that permits of more extensive conservatism in the treatment of tuberculosis in early age. This is an important fact, as the articular ends, as is well known, play an important part in the growth of the extremities, and destructive operations in children are apt to leave useless limbs from lack of growth.

The danger to life from articular tuberculosis presents the following points for consideration:

1. Sepsis, a secondary invasion of the pus microbes into the joint and peri-articular abscesses, is not uncommon. The pus microbes invade, not by auto-infection, but through careless or rather non-antiseptic treatment of spontaneous or artificial openings leading to peri-articular abscesses. It may thus be said that although practically this complication is not an uncommon one, it can be prevented by careful, systematic, antiseptic treatment. The difficulty is that the fistulous openings into tuberculous joints remain open for months and years, attendants and patients grow careless in course of time, and late septic invasion takes place.

2. General tuberculosis, acute or chronic, is much more grave, since it is impossible to prevent it. In the course of years a number of patients succumb to this complication. Billroth states that in sixteen years 27 per cent. were lost in this way. König, from a table of 117 operations for tuberculosis, found that after four years 16 per cent. had died from general tuberculosis.

3. It has recently been pointed out by various authors, especially König, Wartmann, and Albrecht that operations on tuberculous joints may cause immediate infection, the so-called operation tuberculosis. This complication is not very common; König in his extensive experience has seen only sixteen cases, and Wartmann, from a collection of excisions amounting to 837 cases with 225 deaths, found only twenty-six cases of operation tuberculosis. It sets in, as König describes it, seven to ten days after an operation, which may be aseptic and heal by first intention, either as acute tuberculosis of the lungs or tubercular meningitis, terminating in death three to four weeks after the operation. Sometimes in cases where the operation is followed by suppuration and secondary operations become necessary, it follows these.

4. A number of patients in the course of years succumb to amyloid degeneration of the spleen, the liver and especially the kidneys, with

its accompanying dropsy, which takes away some of the survivors.

I shall say nothing as to the treatment of the articular tuberculosis, inasmuch as this question belongs to special surgery, and would be altogether too extensive to be taken up in the time allotted by this Society to the discussion of the question of tuberculosis.

However, before leaving the field of tuberculosis I want to call the attention of the Society to a comparatively rare localization of the tubercle bacillus, and to an affection that has only been recently recognized as such, namely,

TENDON TUBERCULOSIS.

Tendon tuberculosis is a necessary appendix of tuberculosis of the joints. I do not mean tuberculosis of the tendons where the tuberculosis creeps out along the tendons from a tuberculous joint, as you find it around the tendo Achillis from the ankle joint, or the flexor tendons of the arm from a tuberculous wrist-joint; but I mean primary tendon tuberculosis, which is on an equal footing with any other primary synovial tuberculosis. The subject of tendon tuberculosis is a new one. French authors more than thirty years ago called attention to a so-called fungous tendon synovitis, describing it, as far as gross appearances go, very well, but of course they did not come to an understanding about its pathology any more than about that of the so-called synovitis of the joints. Nothing was done until 1875 when Volkmann¹ gave a masterly description of the tendon tuberculosis, but without recognizing it as a tuberculosis. Then came Riedel, König's assistant, who showed that the rice bodies so commonly found in the so-called fibrinous hydrops of the tendon sheaths, or hygromas of the flexor tendons of the hand always indicate a synovial tuberculosis.

I wish only to say a few words about the pathology of this form of tuberculosis, because as far as it needs treatment, it is a synovial tuberculosis—a fungous synovitis. It is a tuberculosis with an enormous development of tuberculous tissue in the sheath of the tendon and on the tendon itself. In the sheath of the tendon it forms a layer of from one to four lines in thickness, of the usual well-known gelatinous tuberculous tissue. On the tendon it forms a similar layer usually smaller and with that important anatomical feature that this granulation tissue creeps down between the bundles of the tendon and separates them until finally it makes a perfect brush out of them; then atrophy of these separate bundles of the tendon takes place and the tendon ruptures—a spontaneous rupture in the same sense as a spontaneous fracture, that is, that with a very slight movement the tendon tears. If left alone this tendon tuberculosis has the same

fate as tuberculosis of the same character in other parts of the body; it goes on to liquefaction of the tubercles and the surrounding tissue, and pus, if we may so call it, tuberculous pus without the pus microbes, forms. This abscess is opened or breaks spontaneously, leaving tuberculous fistulæ with no tendency to heal, just the same as fistulæ leading into tuberculous joints. The same fate, as with all other tuberculous tissue, will be the result of the opening, namely, that if septic invasion from without takes place, that is, if the tuberculosis is not removed at that time, or anti-septic precautions taken, then sepsis sets in and finds a congenial soil in the tuberculous tissue, an excellent culture soil for the common pus microbe; just the same as in tuberculous abscess from Pott's disease, or tuberculosis of the vertebral column, in which the opening is, in the large majority of cases, the beginning of the end. Tendon tuberculosis most commonly attacks the flexor tendons of the hand; then we have the so-called hygroma of the hand with its swelling in the palm and above. These are undoubtedly always tuberculous; further we find isolated tendon tuberculosis in the extensor tendons of the hand, more rarely in the tendons of the lower extremity, as the patellar ligaments, of which I have seen one case.

I wish to present a patient to-night who has kindly consented to come down and show his hand. The history is as follows:

John Harrington, laborer, aged 35. Family history good. The present trouble commenced about three years ago when the patient noticed a slight painless swelling on the dorsum of his hand. A watery fluid collected which was removed but collected again; the increased swelling gave rise to severe pain and inability to flex the fingers. After a few months the swelling broke spontaneously, and there was a sero-purulent discharge. This discharge continued for about two years, the swelling increasing slightly, until October 27, 1888, when the patient came to my clinic at the College of Physicians and Surgeons.

Examination revealed a swelling about five inches long in the median line of the dorsum of the hand extending from about one and one-half inches from the metacarpo-phalangeal articulation to beyond the wrist-joint.

Diagnosis: Tendon tuberculosis of the extensor tendons of the hand. An incision was made extending from within half an inch of the metacarpo-phalangeal articulation, seven inches up the forearm in the median line, over the swelling. The incision was made down to the muscles and tendons and a quantity of rice bodies removed; these were also found inclosed in the sheaths of each of the tendons when opened. The sheaths of the extensor tendons were removed and each and every tendon was thoroughly scraped to re-

¹ Beiträge zur Chirurgie.

move the tuberculous material. The extensor tendon of the thumb was divided, it being impossible to separate the tuberculous tissue without this. The tendon was united to one of the other extensor tendons. The integument was sutured with silk and the hand and forearm dressed antiseptically. One week after the operation the wound had united, and the sutures were removed and the hand dressed. Two weeks after the operation there was good union. Four weeks after the operation flexion and extension of the fingers was regained. There was no sign of return of the disease.

When this man came for operation, one of the tendons, the short extensor of the thumb, was destroyed; the others could be separated from the tuberculous tissue. This dissection of the tendons from the tuberculous tissue takes a long time. It has to be done with the utmost care because the tuberculous tissue that runs down between the fibres of the tendons is adherent; there is no short way of rubbing it off the tendons, it must be dissected off carefully, particle by particle, and then the whole sheath of the tendon dissected off with scissors and forceps, just as carefully as in the joints, particle by particle, and this law holds good in all operations for tuberculosis. Then come the difficulties of dressing. It has been found that in dressing with drainage tubes, antiseptic washes, etc., the results are not as good as if the wound is left to heal by the organization of an aseptic clot, as Lister called it. But this healing without drainage implies that the wound shall be filled with blood. No exact union of the wound is made, but a couple of spaces are left between the sutures so that the surface blood can get out. Schede recommends this method, having found that the connective tissue formed in the nidus of the clot was more pliant than the connective tissue formed when there was drainage. That method was used in this case, and the consequence is that much more extension than before is possible. This patient also shows a tuberculosis of a metacarpo-phalangeal joint.

The prognosis as to the future functions of the tendons depends upon perfect asepsis (if there is not perfect asepsis then the result is lost); supuration must not take place after the operation. It further makes a great difference as to the future function of the hand whether the tuberculosis is on the dorsal or on the palmar side. On the palmar side of the hand where we have to open from the palm up to the middle of the forearm, the palmar ligament may be divided and reunited with sutures, and it may be necessary to do this so as to dissect out the wall of the common tendon sheath. Tuberculosis in the palm of the hand gives much less satisfactory results after operation for removal of the tuberculous sheath from the tendon, than on the dorsal side

of the hand. Another point is that when the tuberculosis has reached the upper end of the tendons it creeps up the muscles not only in the loose connective tissue, but up between the bundles of the muscular fibers. This we can recognize with the naked eye by the color and consistency of the muscle. The invaded muscle becomes hard and grayish and is not shining as the normal muscle tissue. Of course all this tissue has to be cut away carefully, because it is one of the modern improvements of our technique in operating for tuberculosis that every part of the diseased tissue is carefully removed from the joints by scissors and forceps, so as to leave, if possible, no tuberculous tissue at all. This makes a very different operation from the one where the bones are sawed off from the joints, for instance, and the abscess drained, no care being taken either of the walls of the abscess or the cartilage, the consequence being that the tuberculosis very often grows right out again and there is greater liability to sepsis setting in. These operations are long and tedious, but if perfect asepsis is secured we may expect the results to be locally permanent. Tendon tuberculosis is a rare disease; it exists only in 1 or 2 per cent. of the cases in the statistics of tuberculosis.

MEDICAL PROGRESS.

INTUSSUSCEPTION AND THE USE OF INJECTIONS.—(By W. E. FOREST, M.D., of New York.) In the *Medical Record* for August 3, is reported a case of intussusception in a child relieved by the use of sulphuretted hydrogen gas from a Bergeon apparatus. It is stated that this is the first case, as far as known, where the Bergeon apparatus has been used for this purpose in this State.

However admirable this method may be in the treatment of the condition in question, if another method can be shown to be as effective and more safe, more simple, and more scientific, the former should give way to the latter.

Without further introduction, I will suggest to Dr. Rodenhurst and the profession in general, a method that will meet the requirements mentioned.

In using injections of either gas or liquid to overcome intestinal obstruction, one ought, if possible, to know two things, namely: 1. How much force (approximately) the intestine will stand without danger of rupture. 2. How much force one is using at any moment in giving the injection.

As to the first point, a series of experiments made by me and detailed in a paper read before the New York Academy of Medicine, and published in the *Journal of Obstetrics* in 1886, would seem to show

that it is not safe to use an injection with a pressure exceeding fifteen pounds to the square inch in a case of intussusception, and this only in adults. In infants the pressure should not exceed six or eight pounds to the square inch (see *Journal of Obstetrics*.)

Now, with the Bergeon apparatus a greater pressure than the above might be used, I suppose. With the Davison syringe I have shown that a pressure of from thirty to seventy pounds to the square inch may be exerted on the intestine, and hence a very dangerous pressure.

The objection to the Bergeon apparatus, aside from the fact that one cannot measure and regulate the pressure accurately, is its cost and clumsiness as compared with the apparatus I have suggested in the article referred to.

In order to measure the pressure used in an injection, it is only necessary to remember that one atmosphere, or fifteen pounds to the square inch, supports a column of water thirty-three feet high; hence a column of water thirty-three feet high will make a pressure of fifteen pounds upon every square inch of surface at the base of the column.

Now, if this column of water be held in a rubber tube of ordinary size, after allowing for friction of the water in the tube, it will be accurate enough to say that every two feet of the column represents a pressure of one pound to the square inch; hence a rubber tube six feet long, filled with water and held vertical, will cause a pressure of three pounds to the square inch at its base; and a tube twelve feet long will exert a pressure of six pounds to the square inch at its base; and so on.

Now, apply this principle to a case of intussusception in a child, for instance. The surgeon, instead of sending to the nearest city for a consultant and a Bergeon apparatus, goes to the drug store or hardware store and gets a rubber tube twelve to twenty feet in length. Into one end is inserted a funnel; into the other a nozzle of a Davison syringe. In order that the injected fluid may be retained, a shoulder may be made on the nozzle about one inch from the end, by winding a roller-bandage around. This shoulder will retain every drop of the injection when pressed against the sphincter. Now a pitcher of warm salt-water completes the apparatus, and the father of the child is the assistant surgeon. The patient is taken into the hallway of the house, so that the requisite elevation may be gained, the child is etherized, the surgeon inserts the nozzle of the syringe and holds it in the rectum with one hand, while with the other he manipulates the walls of the child's abdomen. The assistant pours the water into the funnel and slowly raises it, mounting the stairs at the time if necessary. When the funnel has been raised twelve feet above the level of the child's body,

great care should be exercised, as the pressure is now about six pounds on every square inch of colon below the obstruction. It is seldom that a greater pressure than this will be needed to reduce a recent invagination. The pressure should be increased very slowly, as time is an important element in reducing an invagination.

If in any case the pressure mentioned above does not bring about the end aimed at, the pressure may be increased up to ten pounds to the square inch.

For further details as to the method and when to employ it, as well as for a simple and cheap method for generating gas and its use in reducing an intussusception, I must refer to the article in the *American Journal of Obstetrics* for 1886.

In that article are the histories of two cases of intussusception successfully reduced by gaseous and fluid enemata introduced from a syphon of Vichy water.

Since publishing the method for the use of a column of water, Dr. A. S. Hunter, of this city, has used the method successfully in a case of invagination in a child.—*Medical Record*.

MEDICAL TREATMENT OF THE INTESTINES.—In concluding an article on the subject of intestinal obstruction (*Medical Press*) Prof. H. NOTHNAGEL says:

"I may briefly state in one sentence all the treatment I can recommend as an hospital consultant: Absolute abstinence from food; induce the peristaltic action from below; still it from above; and above all, avoid purgative medicines. Further I know of nothing to add for the guidance of others.

"As regards other methods of treatment, very little can be said, but there are one or two forms of recent origin which I cannot pass without a remark. Washing out the stomach was introduced by Kussmaul as a remedy, but past experience of this form of treatment has nothing particular to commend itself, and has been of very little use. One advantage in using it is that it is a harmless application, and there is not any danger attending its use. The clyster I can always recommend as a most effectual remedy in all forms of faecal accumulations, but it is not suitable for faecal vomiting where there are inflammatory conditions. The object of a large clyster is to break up large faecal masses, but this is to be avoided where there is a tender bowel. Electricity is another remedy which has come into recent favor, and is not without merit. When using this agent it is recommended that both poles be placed over the tender or painful part of the bowel, or one pole introduced into the bowel. The successful cases from this treatment are so few that no opinion can be vouchsafed. There are other drugs, like belladonna, nicotine, and others that might be named, but there is one regularly prescribed drug

that might be noticed. There was a time when every stoppage of the bowel must be drugged with mercury, but the greater number of the observers of this treatment have spoken very adversely of it. No doubt an individual case has arisen where success may be attributed to the drug, but these are very few, and leave us in grave doubt when it should be used at all. If the tradition of this drug tempts you to its use in any form of vomiting, I beg to consign it to your charge with care, and trust that you will carefully use your own judgment in applying the drug where the least danger exists. In concluding my observations on the medical treatment of the bowel, I felt it my duty to say that the most severe cases that we meet in our daily practice are frequently beyond the reach of our medicines, when arising from locking of the bowel, and properly belong to the region of operative surgery for their relief."—*The Canada Lancet*.

A CASE OF ABDOMINAL GESTATION.—DR. H. KREUTZMANN, of San Francisco, reports a case of this description with the following interesting details: The patient, æt. 37 years, had borne two children and had twice miscarried. In February, 1888, she believed herself to be again pregnant. The last menstruation was on January 20. Two months later she had a hæmorrhage from the genitals—this was regarded as a miscarriage. From that time a sero-sanguinolent discharge took place, and repeatedly during the next two months fleshy masses were removed from the vagina. In the meantime the usual signs of pregnancy were apparent, in addition to which there was acute abdominal pain. Later on foetal movements occasioned great pain. There was much vomiting. At about the period of her expected confinement she experienced excruciating pain of a bearing down character, then the pains suddenly ceased. Attempts were made to deliver the woman *per vias naturales*. From this time on the patient's condition became much worse and she sank rapidly from fever and exhaustion. The patient was first seen by the reporter November 26, at which time she was extremely feeble; pulse 120, temp. 102°; abdomen very tense and tender. An examination under anæsthesia revealed a tumor filling lower abdomen and reaching as far as the umbilicus, above which there was tympanites. The os externum was slightly dilated and the posterior cul-de-sac was filled with a hard mass. The os uteri was then dilated by instruments and the cavum uteri found empty. Corpus uteri was palpable. Extra-uterine pregnancy was diagnosed. Seven weeks after death of the foetus laparotomy was performed by Dr. Fred Hund. Upon opening the peritoneum there was an escape of fetid fluid and gas. A full grown macerated foetus was extracted. The ovisac was everywhere adherent. The posterior cul-de-sac was occupied

by the placenta, which was left *in situ*. The patient did well at first but finally died of inanition on the seventeenth day. The autopsy revealed extensive adhesions of the ovisac to the intestines. Death was due to ichoræmia. The reporter believes that in every case of extra-uterine pregnancy up to sixth month laparotomy should at once be resorted to—the same holding good in all cases, regardless of time, where the foetus is dead. Cases which have reached the sixth month, with the foetus living, and which are distinctly abdominal ones, should be operated upon at term to recover a living child. The aim should be to remove the entire ovisac and its contents at once.—*Pacific Med. Jour.*, September, 1889.

TUBERCULOSIS OF THE SACRO-ILIAC JOINT.—DR. LUDWIG HEKTOEN, of Chicago, gives a very complete and interesting account of such a case, together with a complete and careful analysis of the post-mortem findings. He also gives brief reports of five other recent cases of similar character, one of which is notable as being the sole authentic instance on record of a primary synovial tuberculosis of the sacro-iliac joint. Incorporating these cases with the 55 collected by Van Hook he gives the following tabulated exhibit of the locality of the abscesses in the entire group:

Extra-pelvic, 25, or 41 per cent.	Pointing posteriorly, 20 abscesses (<i>i. e.</i> , immediately over the joint).	
	Dissecting upward (pointing in gluteal region), 2 abscesses.	
	Dissecting downward (pointing in gluteal region), 3 abscesses.	
Intra-pelvic, 36, or 59 per cent.	Dissecting upward to lumbar reg'u, 5 abscesses.	Under periosteum, 1 abscess.
		Without finishing exit anteriorly, 7 abscesses.
	Dissecting outw'rd and forward.	Toward insertion of the ileo-psoas, 11 abscesses.
	Dissecting directly downward.	1. One thro' sciat' notch. Through gluteus, 5 abscesses. Downward to thigh, 3 abscesses.
		2. Inward toward the ischio-rectal fossa. Rectum, 2 abscesses. Perineum or anus, 2 abscesses.

—*North Am. Practitioner*, Oct., 1889.

TO PREVENT ABORTION.—DR. Q. C. SMITH suggests the following:

Fluid extract of ergot,
Fluid extract of black haw,
Tr. belladonna,
Tr. ipecac, āā f 3 j. ℥.
Sig.—A small teaspoonful, t. d., after meals.

It is said to be especially suited to the prevention of habitual abortion, caused by deranged constitutions, and is also very effective for allaying uterine irritability resulting from traumatism or external violence. Of course the bowels should be kept comfortably open regularly. Opium is not admissible in this class of cases, unless it is desired to terminate pregnancy without delay.—*Nashville Journal Med. and Surg.*

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MEDICAL SOCIETIES AND ORGANIZATIONS.

Organization and division of labor is a theme that is of practical everyday interest to all thinking men. It engages the attention of statesmen, politicians, philosophers and financiers, as well as of the laborer, artisan, manufacturer, merchant and professional worker.

In the struggle for existence and rivalry for supremacy, effective, congenial organization is the very first act for consideration. It precedes all forms of government, and antedates all corporate existence. Corporate organization keeps step in the most beautiful manner with the development paces of the scientific investigator.

Without the invention of the lamp chimney the Standard Oil Company would never have breathed the breath of life, in the form of an organization that within a score of years has built a number of colossal fortunes, and moulded the acts of powerful State Legislatures as if they were clay in the hands of the potter. One man, even with kingly authority, could not have done this, but an effective, congenial organization was equal to the occasion.

In the last century the East India Company became more powerful and wealthy than the crown of England, and it is very questionable to-day whether organized corporate power is not greater in this country than the political power. We are quite sure it would be the greatest if our form of government were any other than republican. Men of all occupations recognize the power and necessity of corporate organization, in order

to the accomplishment of any specific purpose of magnitude.

In our profession as practitioners of the healing art, whether engaged in making bedside observations, or delving in the unknown, with or without the aid of instruments of precision, that may be fitly spoken of as supplying a third hand and eye; division of labor and society organizations are an absolute necessity. The results of the labor of any one man are usually small, but as an integral part of the labors of a whole profession that has an effective organization, his value may be compared to that of the pinion wheel in a watch; without which the entire remainder is entirely valueless as a timekeeper.

Hence, the necessity and use of professional organizations, where every member will be a living factor, properly adjusted and in the place where he will fill his mission in doing the greatest possible amount of good to himself and his fellow men.

The village and city, county and State, district and National societies all have their place, and as every member of the most obscure society has his definite place in that organization, so should all organized medical societies be brought together in order to become and form one unified, composite body, complete in all its parts, and embracing within its folds every reputable member of the medical profession in this wonderland of ours.

Through the medium of a perfected system of organization, the results of all observations, thoughts and investigations, may be deftly placed in their proper niche for utilization for the common good.

For lack of necessary facilities for presentation to and through some society organization, many a valuable discovery has literally been lost, not only to the medical profession, but its benefits for an indefinite time have been withheld from the entire world.

Not infrequently the reading of an elaborate paper brings out in discussion a greater and more valuable fund of information than the author was able to obtain through weeks of labor in scanning all the books and journals at his command.

The frictions of all society meetings have their beneficial effects. The conscious or unconscious *cgo* that is apt to be a part of every educated man, is often rasped, filed, sandpapered and finally rubbed down to a polish that is always more

becoming to an accomplished and well-bred physician, than the rough jewel he was before the process was undertaken.

With a marvelous growth of population, medical science has kept abreast of the times. Rapid transit by means of steam and electric motors; cheap and practically instantaneous intercommunication have absolutely revolutionized commercial methods of business, and singularly enough they have in like manner influenced the ways of the medical practitioner. He is summoned by telephone or telegraph and often imparts the most important and vital directions through the same instrumentality.

The physician of the period has ceased taking and looking to a cumbrous quarterly or half yearly medical magazine for his current literature, and nothing short of a weekly meets his arbitrary and hungry demands, while the doctor who has prepared a paper for publication and does not want it printed and sent on its mission within a week, is a rare man; his family are suffering from a mortality that will only remind us of those saddest words of tongue or pen—"what might have been." ^{8.}

The local medical society is a most important factor in our professional organization. Every such society fitly represents a cog in the great driving wheel of progress.

Noting the scientific value of society organization and the incalculable benefits to be derived from the accumulated wisdom unfolded and unbidden at the meetings, we are not to forget that one of the great benefits conferred, is the opportunity furnished by the occasion for a cultivation of peace, amity and goodwill. The people and practitioners alike are benefited in promoting inclinations for consultations, and in this manner demonstrate to the world the brotherhood of man as exemplified in our profession, and the cosmopolitan character of our art.

Professional activity has already accomplished a world of good in organizing and fostering the growth of medical societies, and now there is no more important question open for discussion than the comprehensive one as to what are the best methods to be used, in order to bring about a complete unification of the entire medical profession in their society organizations. In a recent issue of *THE JOURNAL*, we endeavored to indicate a feasible plan for bringing about a unification of

the entire medical profession of this country, through the organization and incorporation of district and other kindred societies as actual branches of the American Medical Association.

The comments directly received and borne to us have been of a favorable and gratifying character. It is our desire that the subject, which we regard as a very vital one to the Association itself, as well as to the entire medical profession, shall have the widest possible attention and discussion.

Organization means power and influence. The more thorough and complete it is made, within the most liberal bounds, correspondingly will the power and influence be great for the welfare of science, the entire membership of our profession, and that of the people.

THE HOME TREATMENT OF CONSUMPTIVES.

Sad indeed is the outlook for the consumptive who is unable to seek a change of climate when that of his home is not suited to life out of doors. So uncertain are all means directed to the local treatment of pulmonary tuberculosis, even Weigert's hot air inhalations, that the greatest hope of arresting the disease lies still in its proper climatic management. By far the largest number of consumptives, however, is compelled to forego this chance of recovery and rely upon the physician and nurse. In only too many instances the former falls into a dreary routine born of hopelessness, while the nurse is but too often an ignorant, inexperienced, though loving member of the family. This is deplorable. If for good and sufficient reasons the doctor does not resort to expensive local measures, but is satisfied if he can merely ameliorate the patient's condition and prolong life, he should at least manage the case intelligently and conscientiously. It is safe, probably, to assert that the average practitioner employs means to mitigate symptoms which in the end defeat the object aimed at. For example take the cough. This is often most harassing and the cause of the sufferer's chief complaint. What is usually given to relieve it? A cough mixture, generally a cough syrup containing opium or one of its alkaloids. The cough is mitigated, but at the expense of the stomach. The best and safest measure addressed to the relief of the cough of phthisis in its later stages

consists in the use of respirators charged with volatile substances. R. DOUGLAS POWELL states it forcibly when he says: "The effect of such inhalations is to relieve cough and to lessen expectoration, and there can be no doubt that, as I believe to be the opinion of Dr. Coghill, who has so ably advocated their use, one of their chief functions is to do away with cough mixtures; for certainly the cough linctus treatment of this eliminative period of phthisis, by lulling cough and deranging the stomach, is the very worst that could be devised." In the early stages, when inflammation is active, JACCOUD insists on the benefit to cough to be derived from persistent counter-irritation over the affected parts. At all events it should be a rule to avoid the administration of opiates except, it may be, in cases of suffering from laryngeal complications.

Another routine prescription is that of atropine for night sweats. This is all right when they are exhausting and cannot be controlled by simpler or more agreeable means; but it so often produces so much sleeplessness and restlessness, and the sweating is so often less than is represented, that a little thought on the part of the doctor will discover some efficient and more desirable remedy.

How now is it with the nursing of the consumptive? Alas! In most cases, the attention bestowed by mother or sister is fraught with such a degree of solicitude as defeats its own ends. More intelligent nursing and firm enforcement of salutary orders, with less enervating *coddling*, would be far better for the invalid.

The principle of treatment of all consumptives should be, the least medicine possible and the greatest possible nourishment. Both physician and nurse should comprehend this and work together for its accomplishment. The consumptive's stomach is sensitive already and loathes the very thought of *ingesta* of any kind. Then why increase it by drugs and particularly opium?

The wisest treatment of the phthisical sufferer is to be found in his simplest and most natural management. The physician should bestow his thought upon the most suitable kinds of nourishment, modifying these as the state of the case varies. He must not content himself with issuing the vague instruction to give anything the patient can eat. Thought is necessary. At first

force upon the system all the nitrogenous food it can be made to assimilate by help of fresh air and judicious exercise. But when hectic is consuming the frame and the supply of oxygen is small by reason of extensive structural loss as well as inability to exercise, then to overload the system with such food is but to heap fuel on the flames. At such a time a readily oxidizable non-nitrogenous dietary is indicated. While the physician is thus thoughtfully superintending the character of the food, the nurse should be studying how to successfully tempt the capricious invalid to take the nourishment. In the skilful preparation and dainty serving of the viands there is ample room for the nurse's ingenuity. In all other matters pertaining to the *art* of nursing, in short in the hygiene both of the patient's person and surroundings, intelligence even more than affectionate solicitude will minister to the comfort and prolong the life of the consumptive.

Meantime the welfare of the home circle should not be sacrificed to the care of the invalid. Strict antiseptic and prophylactic measures should be carried out. The health of the well members of the family is of no less importance than the care of the sick!

It is beyond the scope of this article to detail the proper management of consumption, its aim is only to emphasize the fact that, although medical skill has not yet found a means of successfully coping with consumption, much can nevertheless be done by a wise, not by a routine, direction of the home-treatment of phthisical patients.

EDITORIAL NOTES.

HOME.

THE TRI-STATE MEDICAL SOCIETY.—The meeting for the organization of this Society, was held at Chattanooga, Tenn., on the 15th inst., and was in session for two days. A special correspondent says that in every particular it was a complete success, and promises to embrace the best working body of medical men in the South. The membership numbers over eighty. The papers were abundant and of good quality, and the discussions far above the average in ability and interest. All in all, the outlook for the new Society is most promising. We shall have occasion to refer to its proceedings in a later issue.

WABASH SURGICAL ASSOCIATION.—The annual meeting of this Association will be held at Toledo, O., on the first Tuesday in November.

MANAGEMENT OF GARBAGE IN LARGE CITIES.—Dr. Oscar C. De Wolf, ex-Health officer of Chicago, contributes an excellent article on this subject in the *Sanitary News* of October 12. He says that thirty-five years ago preventive medicine consisted in trying to keep out disease by quarantine methods; now it consists chiefly in removing the conditions favorable to its existence and spread. The country is constantly pouring into the city the organic matter necessary to sustain the city's life. From the prairies of the West, from the fields and gardens of the South, from foreign lands, and from the seas loaded trains and freighted ships are constantly arriving and discharging the provision for the organic wants of the population. This provision is not all consumed, but a large residue remains, effete, putrefiable, dangerous, which, if not speedily cast out beyond the borders, or otherwise properly disposed of, is sure to produce a poison by its decomposition which not only directly affects the health of the community, but indirectly supplies a breeding place for the specific germs of disease and stimulates them to great activity of development.

In the country vegetable growth makes use of this effete matter as a stimulant to other growth, reorganizing it into other nutritious substances. In the city this source of putrifaction is wanting; small accumulations from each family result finally in immense quantities from many families, which impregnate the soil, vitiate the air, and cling in putrid films to the walls of dwellings and to all exposed surfaces. Unless, therefore, a city is provided with the proper means to care for this refuse in a sanitary manner, the accumulation will work a steady and sure vitiation of all the avenues of life; and one of the great advances of sanitary science in the later years, along the lines of disease prevention, has been the successful effort to remove this filth from all its hiding places in alley and street, area and corner, and the indispensable provision to care for it and dispose of it by sanitary methods.

The custom of using garbage for filling low lots and old water courses within the limits of a city—and which were to be used as sites for

dwellings—or feeding it to swine, was long continued, and is even now permitted in some localities, although such methods can receive nothing but the most emphatic condemnation from sanitarians. . . .

Rats are the peculiar vermin which swarm about kitchen garbage in all our cities, and if a man may harbor 100,000,000 of these trichinæ parasites—as Cobbold says he may—then a rat may possibly be infected with 1,000,000, which at a certain period of evolution of the parasite are lying free in the intestines of the rodent, and which may be freely discharged from the bowels with the *fæces*. Is it strange, therefore, that hogs fed on city garbage are peculiarly liable to this dangerous infection, and are regarded with suspicion by sanitarians as food for man when thus fed?

The feeding of garbage to milch cows is also very objectionable from the sanitary stand-point. It diminishes the vigor of the animal and vitiates the secretion of milk.

THE MEDICAL MIRROR is the title of a new journal to appear in January, under the editorship and management of Dr. I. N. Love, of St. Louis.

FOREIGN.

AN ANGLO-AMERICAN MEDICAL ASSOCIATION IN GERMANY.—Some English and American physicians have resolved to found in Vienna a society to be called the Anglo-American Vienna Medical Association, with a view to giving information and moral support to the English and American doctors and students of medicine who come to the Vienna University. As a rule, there are but few students of medicine from England and America, but a great number of doctors of medicine. In the last half year 103 American doctors were on the books.

A HOSPITAL FOR STUDENTS.—The Association for the care of sick students in Vienna is about to purchase, at a cost of \$22,000, a building suitable for a hospital, in which forty patients can be cared for. The annual cost of supporting the hospital is estimated at \$6,000.

DR. PROTHEROE SMITH, the founder of the Hospital for Women, Soho Square, London, died September 28, aged 80 years.

PROF. BARDELEBEN has been elected Dean of the Medical Faculty of the University of Berlin.

TOPICS OF THE WEEK.

LAPAROTOMY DURING MENSTRUATION.

We quote the following paragraph from the President's address, delivered at the fourteenth annual meeting of the American Gynecological Society, held in Boston, September, 1889, by DR. H. P. C. WILSON, of Baltimore:

But, gentlemen, before closing this address, which you have required me to deliver, and which is more trying to me than many laparotomies, I must present you with one question: Shall we perform laparotomy immediately preceding or during menstruation?

This is a question which frequently embarrassed me in my earlier professional experience. Books were searched and authorities consulted for its elucidation, but I found nothing to enlighten me on the subject. The medical friends with whom I consulted advised against such a procedure. In addition to this came the paper of Dr. Horatio R. Storer, read at the first meeting of this Society, in 1876, in which he concluded "that for pelvic operations, all things being equal, it is better to select the week immediately following the cessation of the catamenia" for all such operations.

Operations per vaginam may require the selection of the uterine ebb, where such choice can be made, as the dressings and attention necessary afterward may be embarrassed by menstruation; but for laparotomies involving the pelvic organs my experience teaches me to select the uterine flood, rather than the uterine ebb. During the uterine flood the circulation and innervation are in a state of tonic excitement. During the uterine ebb they are in a state of relaxation and depression; and patients thus are more liable to passive hæmorrhages, the absorption of septic poison, the deadly influence of shock, than when the system is under the stimulus of the uterine flood.

It may be said that inflammatory troubles are more apt to be set up during the uterine flood. I would ask the Fellows how many of their laparotomies have been lost by inflammation other than septic. I cannot recall one in my own experience. Shock, hæmorrhage and blood-poison have been the causes of death in all cases, and blood-poison oftener than all other causes together. —*Boston Medical and Surgical Journal.*

PÆDIATRICS AND PUBLIC HYGIENE.

At the recent meeting of the American Pædiatric Society, the President, DR. A. JACOB, in his annual address, makes reference to this important subject as follows:

"The most vital questions of public hygiene are most intimately connected with pædiatrics. It is mainly two subjects that attract the attention of those who take an interest in children. I allude to the school and to constitutional diseases. My remarks to-day can be but fragmentary, but still I must not, both in the interest of our science and human society, omit to emphasize the fact that it still appears that our schools were establishments organized to produce nearsightedness, scoliosis, anæmia,

and both physical and intellectual exhaustion. Contrary to the treatment a colt receives at the hands of its owner, human society, or the State, permits or directs that the powers of a child should be rendered unfit for its future functions, physical, mental and moral, for these three are indelibly interwoven. It requires physical and mental education to fertilize the soil for the evolution of morals. Thus the physician, and especially he who makes pædiatrics his special study, is a pedagogue by profession. The question of school-house building and school-room furniture, the structure of bench and table, the paper and the type in the books, the number of school hours for the average child and the individual pupil, the number and length of recesses, the hours and duration of intervening meals, the alternation of mental and physical training, the age at which the average and the individual child should be first sent, have been too long decided by school boards consisting of coal merchants, carpenters, cheap printers, and under-taught and over-aged school mistresses; not, however, of physicians. The health and vigor of the American child in early years seem, according to Bowditch, superior to those of the European; why is the youth and maiden, particularly the latter, so inferior? Why is it that anæmia and neuroses eat the marrow of the land and undermine the future of the country by degenerating both the workers and the thinkers of the community, and the future mothers? If there is a country in the world with a great destiny and a grave responsibility, it is ours. Its self-assumed destiny is to raise humanitarian and social development to a higher plane by amalgamating, humanizing and civilizing the scum of all the inferior races and nationalities which are congregating under the folds of our flag. Unless the education and the care of the young is carried on according to the principles of a sound and scientific physical and mental hygiene, neither the aim of our political institutions will ever be reached, nor the United States fulfil its true manifest destiny. That destiny is not so much the political one of excluding Europeans from our continent, North or South—for indeed the participation of European civilization in the gradual work of removing barbarism ought to be very welcome—but of raising the standard of physical and mental health to possible perfection, and thereby contributing to the welfare and happiness of the people."

THE ARTIFICIAL FEEDING OF INFANTS.

At the first annual meeting of the American Pædiatric Society, held in Washington, D. C., September 20 and 21, 1889, DR. A. V. MEIGS, of Philadelphia, read a paper upon this subject, a report of which we copy from *The Medical Record*:

The author said that, after a long experience, he had seen no reason for making any radical change in the artificial food which he had previously recommended. He had found that mother's milk never contained more than 1 per cent. of casein. This food was based upon the dilution of cow's milk, for the reason that it contains too much casein; the further need of the addition of cream because, in diluting, the fat was reduced to too small an

amount; the addition of sugar, to make it equal to the amount contained in human milk; and of lime-water, to change it from being an acid to an alkaline fluid. However, he had fallen upon several improvements to render it easier to get together the required amounts of the different constituents, and thus simplifying the work of the nurses. He directs that instead of taking cream and milk in the proportion, respectively, of two and one in eight, three parts of a weak cream be used, which is obtained as follows: One quart of good ordinary milk is obtained and placed in a high vessel, and allowed to stand in a cool place for three hours. Then one pint is poured slowly from this, care being taken that the vessel is not agitated, the object being to obtain the upper layer of fluid, rich in fat, and leave the lower comparatively poor portion behind. When the child is to be fed, there is taken of this weak cream 3 tablespoonfuls, of lime-water 2 tablespoonfuls, and of sugar-water 3 tablespoonfuls. The sugar-water is to be made in the proportion of 18 drachms of milk-sugar to 1 pint of water. This is an improvement upon the food recommended previously by the author, because it is more economical (cream being expensive) and the food is less likely to ferment.

THE TREATMENT OF GASTRIC DIGESTION.

In cases where there is reason to believe that gastric digestion is imperfect, common salt should be used in increased amount in the food, so that the quantity of hydrochloric acid may be increased. If, however, there is reason to believe that lactic acid is present in too small a quantity to split up this salt, then hydrochloric acid must itself be used, and where it is employed given freely in order not only to act thoroughly itself, but also to perform an equally important function, namely, the conversion of pepsinogen into the active body pepsin. In other words, deficiency of pepsin in the juice is to be corrected not by a prescription containing much pepsin and little acid, but rather the reverse, for the pepsin in the prescription is after all an extraneous product, while the pepsin brought into being by the acid is a normal secretion. Of course the quantity of pepsin must depend on a normal formation of pepsinogen, but it should not be forgotten, on the other hand, that as pepsin acts by catalysis, and is a most powerful ferment, only very small quantities of it are absolutely necessary, while large amounts of hydrochloric acid, comparatively speaking, are essential.

In an article recently published in the *Revue Médicale de la Suisse Romande* Bourget has enunciated some thoughts which are so completely in accord with the views here expressed as to be worthy of quotation. He believes, as does the writer, that the hydrochloric acid is generally the secretion which is lacking in amount, and recommends its free employment as the most important part of the treatment of gastric indigestion. He does not seem to do this because he believes it to increase the pepsin, but only because he thinks the acid secretion is more apt to be deranged than is that of the ferment. According to my own practical experience and the much more reliable information gained by experimental research, it is to be concluded, therefore, that pepsin is to

occupy the least prominent position in a prescription for gastric disturbance, and that the acid is to be freely used. Indeed, I am so surely convinced of the importance of the acid in its double sphere that I fear I am sometimes inclined to give almost no pepsin at all.—*Med. Analectic.—Mass. Med. Journal.*

THE MEDICAL PROFESSION AND THE WORLD'S FAIR.

Under the above caption the *Medical Record* deplors the fact that the Mayor of New York has not as yet placed a representation of the profession on the World's Fair Committee. It is not so in Chicago, where there is a regular organization of the profession working with the general committee to raise \$10,000,000 towards securing the World's Fair for this new Metropolis of the United States. The editor very sensibly remarks that "as the purposes of the Fair have so far been outlined, there will surely be a field for medical and surgical displays of various kinds. There should be historical exhibits to show the progress in the care of the sick, and in their surgical and medical treatment, with displays illustrating the old hospitals and the new, the old surgical instruments and mechanical appliances and the new. There should be illustrations also of the development of the specialties, with displays of all new apparatus and instruments of precision in every field. The development of bacteriology, the improvements in methods of teaching, historical accounts of medical progress, and of the growth of sanitary science, all would have a fitting place. It is easy to see that a medical and surgical exhibit might be made which would have great intrinsic interest, and would be of immense educational value, not only to the medical profession, but to the laity."

We would add to this a suggestion that whichever city is selected there should be held the meetings of the American Medical Association, and the various National Societies of Specialists in 1892. This is not only desirable from the standpoint of economy, but will ensure a larger attendance at the meetings, and enable the members to "take in" the medical and surgical exhibit so ably advocated by the *Medical Record*.

A DOG WITHOUT A BRAIN.

At the last meeting of German neurologists, held in Baden-Baden, PROF. GOLTZ, of Strasburg, reported a most remarkable experiment. He cut out, in two operations, almost the entire cerebrum of a dog, leaving only the cerebellum and a small portion of the base of the cerebrum. The animal lived for fifty-one days after the last operation and then died of pneumonia. The remarkable part of the experiment was the influence it had on the dog, who, a few hours after the operation, raised himself on his hind legs, put his paws over the side of his box, and looked inquiringly around. He could walk, eat, and drink, and would chew any food that was placed in his mouth. Waking and sleeping alternated naturally. He was restless before feeding, but afterward would become quiet and sleep. A slight touch would awaken him from sleep. During urination and defecation the animal assumed the normal position. Hearing, taste, and smell were, of course, absent—*Wiener Medical Presse*.

PRACTICAL NOTES.

CURE OF FISTULA IN ANO AND HÆMORRHOIDS BY ELECTRICITY.

DR. SHOTWELL, of Grand Rapids, Mich., claims complete success from the following methods of treatment: In fistula he first passes a probe with an eye point from the external opening into the rectum. He then introduces a lance-pointed probe (having likewise an eye near the end), making the point of insertion about three-eighths of an inch further from the anus, and pushes it in through the solid structures, parallel with the fistulous track, till its eye is seen within the rectum. The eyes of both probes are then threaded with the ends of a No. 24 platinum wire about 10 inches in length, and both probes are withdrawn, leaving the wire in the form of a loop. The ends of the loop are now attached to a battery, an electrolytic current turned on and the loop drawn through the partition, in its passage destroying the membrane lining the fistula. No dressing is necessary, but the bowels should not be permitted to move for one week. Union takes place by first intention. The Shotwell rectoscope is employed and the patient requires to be anæsthetized during the operation. Hæmorrhoidal tumors are similarly removed and without the occurrence of hæmorrhage.—*New Orleans Med. and Surg. Journal*.

HYPODERMIC USE OF MORPHIA—THE INITIAL DOSE.

Great diversity of opinion exists as to what constitutes a safe initial dose in a person unaccustomed to its use. This should not exceed for an adult female one-eighth grain, for an adult male one-sixth grain. I have myself seen death follow upon the injection of one-quarter grain in an adult male, and Ringer says "a larger quantity than one-sixth grain sometimes produces serious consequences." There are, I think, two reasons for the large quantities given: (1) The maximum officinal dose of half a grain is much too high. This is evident when we consider that the maximum hypodermic dose, and that for administration by the mouth, is fixed at the same quantity, namely half a grain. All authorities are, I believe, agreed that morphia injected hypodermically is at least twice as potent as morphia given by the mouth. The maximum hypodermic dose ought, therefore, to have been fixed at one-quarter grain instead of half a grain, and we have, I am afraid, the British Pharmacopœia to thank for many fatal results that have occurred. (2) Many of the younger members of the profession have taken their standard of an ordinary dose from the quantities they were ordered, when clerks or dressers, to inject during the time they

were in the hospital. They forget that the majority of these patients were suffering from incurable disease.—*Braithwaite's Retrospect,—Medical Age*.

MALE FERN AND CALOMEL FOR TAPE-WORM.

In the treatment of tænia Dr. Duchesne strongly recommends male fern combined with calomel, according to the following formula:

Eth. extract male fern 2 drachms.

Calomel 12 grains.

M. Make 16 capsules, which are given two at a time every ten minutes until all are taken.

The great advantage of this preparation is that the patient has nothing to drink, and that the purgative is taken along with the worm-medicine. For some people, especially women, capsules are difficult to take, in which case the medicine is perhaps best taken with molasses. Sometimes the capsules provoke colicky pains, but these can be avoided by taking 20 grs. of antipyrin fifteen minutes before the capsules. With these capsules Duchesne has yet to experience his first failure, and he has already used them in hundreds of cases. Male fern is the only remedy that will successfully expel the bothriocephalus. The treatment of tænia in children is a difficult matter, but he has been regularly successful with the following plan: After fasting twelve hours, administer the following preparation to a child of 5 years:

Eth. extract of male fern 1 drachm.

Calomel 6 grains.

Sugar 2 drachms.

Gelatin, q. s. to make a jelly of ordinary consistence

The patient should be told to take an injection of salt water when the worm appears at the anus, and then sit over a vessel of warm water to float the worm and prevent it breaking from its own weight. The one point always to be remembered, on which success depends, whatever the vermifuge used, is the necessity of administering the purgative soon after the substance which stupefies the worm.—*The Weekly Medical Review*.—*Medical Record*.

OBSERVATIONS ON THE USE OF GLYCERINE ENEMATA IN CHILDREN.

During a period of four months glycerine enemata were used at the Evelina Hospital for the treatment of constipation, to the exclusion of purgatives. The children were not allowed to pass more than two days without an action of the bowels. A carefully prepared table is submitted, showing the result of 214 injections in sixty-three children. One drachm of glycerine was given in 156 cases, one drachm and a half in forty-eight, and two drachms or more in but nine.

In 154 instances the injection was followed by normal motions, in twenty-six they were loose, and in twenty-four of more than normal con-

sistency or composed of scybala. In ten only did the enema fail to act. In no instance were there unpleasant symptoms, either local or constitutional. No child was found whose bowels failed to respond to the glycerine stimulation at one time or another.

As regards the time of action, ninety-five injections were followed by motions within five minutes, ninety within thirteen minutes, while with the remainder the time varied from thirty-five minutes to eleven hours. The failures or cases of delayed action were in tubercular patients or those who had undergone operation and were therefore restrained from exercise or movement.

After a brief summary of the action of various cathartics in common use among children, the author expresses himself as very favorably impressed with glycerine enemata, which are easy of application, unattended by pain, quick and natural in action, and followed by but few failures.—*Epitome.—Mass. Med. Journal.*

FOR CHAPPED NIPPLES.

Says the *St. Louis Medical and Surgical Journal*: MITROPOLSKY, of Moscow, recommends chloral as an excellent local means for fissured and excoriated nipples. The latter should be kept covered with compresses (soft linen soaked in a solution of $\frac{1}{2}$ drachm of chloral in 3 ozs. of water). The compresses should be changed every two and a half or three hours. When a prolonged application is necessary, it is advisable to use a weaker lotion ($\frac{1}{2}$ drachm to 6 ozs.) The solution leaves a thin, whitish, firmly adherent film over the diseased surface, which does not disappear by suckling. Pain and tenderness are said to be strikingly relieved almost immediately, the lesions rapidly healing. The chloral compresses do not produce any bad effects on nurslings.—*The Canada Lancet.*

THE MULTIPLICATION OF BACTERIA.

As regards the reproduction of the bacteria, many of them can double their numbers every hour when placed in the best conditions for their activity. In such circumstances then, a single bacterium would in twenty-four hours produce no less than 16,777,220. At the end of forty-eight hours the offspring would amount to 281,500,000,000, and would fill a half pint measure—all produced in two days from a single germ measuring $\frac{1}{150,000}$ of an inch. Fortunately, however, bacteria can rarely so propagate themselves, they meet with all sorts of drawbacks, and thus in spite of their enormous fertility the survivors are in a general way only enough to keep up a fair balance in nature. The diseases producing bacteria, however, have no claim upon our forbearance, and in these the enormous fecundity we

cannot too closely contemplate. Some, like the bacteria of tuberculosis and glanders, propagate themselves slowly; but the great majority of the bacteria causing animal plagues will, in favorable cases, double their numbers hourly.—PROF. LAW, in *The Pharmaceutical Era*.

PHENACETINE IN WHOOPING-COUGH.

DR. HEIMANN, of London, writing in the *Münchener Med. Wochenschrift*, states that he was induced to try the effect of phenacetine in whooping-cough, as he had been very much disappointed with antipyrin. Although he has given children of 3 and 4 years old a few doses of 15 grains each of phenacetine, he has never found any ill effects from its use, and the results, he says, have been uniformly satisfactory—*London Lancet.*

A VEHICLE FOR IODIDE OF POTASSIUM.

Milk as a vehicle for iodide of potassium completely masks the taste, and does not apparently interfere with the therapeutic qualities. Patients who could not tolerate 10 grains when administered in water could soon take 40 grains in milk with no symptoms of nausea.—*Cincinnati Lancet-Clinic.*

THEINE IN NEURALGIA.

PROF. J. K. BANDY, of St. Louis, finds in the hypodermic injection of theine a specific for some forms of neuralgia. The dose is from $\frac{1}{4}$ to $\frac{1}{2}$ gr.; the point of the needle should be brought in as close contact with the sheath of the affected nerve as possible.

EXPLOSIVE MEDICAMENTS.

PROF. ROBERT calls attention to the following explosive mixtures: Chlorate of potash mixed with charcoal dentifrice powder may explode, even in the mouth. Chlorate of potash mixed with catechu, or with tannin, explodes with friction, even if glycerin is added. Chlorate of potash and phosphate of sodium explodes while mixing the powder. One part of chromic acid mixed with two parts of glycerin explodes immediately. Iodine and ammonium should never be mixed together, as it is extremely apt to explode. Bromine and alcohol, forming the bromide of ethyl, often explodes. Picric acid reduced to powder explodes, when mixed with any other substance.—*Gazette de Gynécologie.—The Times and Register.*

PRESERVE YOUR INSTRUMENTS.

You can preserve your instruments from rusting by immersing them in a solution of carbonate of potash for a few minutes. They will not rust for years, even when exposed to a damp atmosphere.

SOCIETY PROCEEDINGS.

American Orthopedic Association.

Proceedings of the Third Annual Meeting, held in Boston, Mass., Sept. 17, 18, and 19.

FIRST DAY—MORNING SESSION.

The Association was called to order by the President, DR. E. H. BRADFORD, of Boston, who delivered an address of welcome.

DR. V. P. GIBNEY, of New York, read a paper on

THE TYPHOID SPINE.

He drew attention to a group of symptoms pertaining to the spinal column, as sequelæ of this fever, and as an anatomical designation used the term *perispondylitis*, meaning an acute inflammation of the periosteum and the fibrous structures which hold the spinal column together. He reported three cases. Careful search of text-books has failed to reveal any cases of like nature. He alluded to a similar condition in which the hip was affected.

Dr. L. A. Weigel, of Rochester, N. Y., contributed a paper on *The Relation of the Thoracic and Abdominal Walls to the Spinal Column considered with Reference to the Treatment of Antero-Posterior Curvature*.

DR. DILLON BROWN, of New York, read a paper on

PSOAS CONTRACTION AS A SYMPTOM.

He referred to the various diseases in which this condition may be found, and gave their diagnostic points, emphasizing the phenomena by means of which each disease could be excluded.

DR. A. B. JUDSON, of New York, read a paper on

THE PREVENTION OF THE SHORT LEG OF HIP DISEASE.

He said the deformities of hip disease are caused by the patient's efforts to so place the limb that it shall be the least disturbed by, and afford him the most convenience in, his customary attitudes and movements. They are (1) abduction; (2) adduction; and (3) extreme adduction and flexion. The second position is practically by far the most important.

DR. C. C. FOSTER, of Cambridge, Mass., reported a

CASE OF CARIES OF THE ANKLE TREATED CONSERVATIVELY.

He gave a detailed account of the case and its treatment. He showed the patient and plaster casts of the foot before and after treatment. He held that such treatment is not so quick and easy as a successful resection, but that the final result is far superior.

DR. C. L. SCUDDER, of Boston, read
A REPORT OF CASES OF CARIES OF THE ANKLE
TREATED BY EXCISION,
exhibiting patients.

He drew the following conclusions:

1. Excision is safe, and the mortality not great.
2. The convalescence and time of after-treatment are short.
3. The disease in the foot is ended; and the prognosis is sure.
4. Profuse suppuration and its consequences are avoided.
5. The likelihood of septic infection is at a minimum.
6. The partial operation of curetting is of very little value.
7. There is no mutilation of the foot.
8. Its usefulness is very great after excision.
9. The question of tubercular infection from operative influence is yet unsettled.
10. Excision of all the diseased bone should be resorted to earlier in the treatment of chronic ankle joint and tarsal disease.

DR. JOHN RIDLON, of New York, reported a
CASE OF CONGENITAL DISLOCATION AT THE HIP.

The patient, a female, aged 10½ years, came under his observation Feb. 16, 1888. The right great trochanter was 2½ inches above Nélaton's line, and it required a blocking under the foot of three inches to make her stand fairly erect.

The old pattern of the Taylor extension hip splint was applied, and the leg elevated on an inclined plane. For one year the child did not leave her bed, and so relaxation of the traction was for once permitted. At the end of this time it was possible to locate the head of the femur, which was found to be displaced upwards and forwards, lying almost directly below the anterior iliac spine, and the difference in the length of the legs was found to be reduced to one-half inch. A jointed splint was applied on Feb. 1, 1889, and the patient was allowed to get up.

DRS. R. W. LOVETT and J. E. GOLDTHWAITE, of Boston, contributed a paper entitled

ABSCESSSES IN HIP DISEASE, THEIR PREVENTION, SIGNIFICANCE AND TREATMENT.

Three hundred and twenty cases of hip disease from the Children's Hospital were analyzed with reference to the number of abscesses occurring and the effect of treatment.

In the 320 cases 75 abscesses occurred, a percentage of 23, which very small percentage is attributed to long continued treatment with the long traction splint and by fixation in bed and traction in the line of deformity whenever deformity or sensitiveness occurred. The operation is not attended with the risk of septicæmia, nor does it prevent the occurrence of tubercular meningitis or amyloid degeneration, and finally it

may be said that thorough operation is followed, in a fair proportion of all cases, by speedy and permanent closure of the abscesses.

SECOND DAY.

The following papers were read: *The Principles of Treatment of Hip Disease*, by Dr. N. M. Shaffer, of New York; *The Early Local Treatment of Hip Disease*, by Dr. A. J. Steele, of St. Louis; *The Operative Treatment of Hip Disease*, by Dr. DeF. Willard, of Philadelphia, and *The Immediate Disregard of Malposition of the Thigh in the Treatment of Hip Disease*, by Dr. Barton, of Buffalo.

Dr. E. G. Brackett, of Boston, read a paper entitled *An Experimental Study of Distraction of the Hip Joint*, which was followed by one on *An Analysis of Twenty-one Cases of Hip Disease Treated by the Thomas Splint* by Mr. John H. Huddleston, of Boston.

Dr. John Ridlon, of New York, read a paper on *Fixation and Traction in the Treatment of Hip Joint Disease*, followed by one on *Excision*, by Dr. R. H. Sayre, of New York, after which a general discussion ensued.

THIRD DAY.

Dr. G. W. Ryan, of Cincinnati, read a paper entitled *When Shall Treatment be Dispensed With in Spondylitis?* The following were also read: *A Contribution to the Study of Flat Foot*, by Dr. V. P. Gibney, of New York; *Traumatism of the Hip, Simulating Thyroid Dislocation*, by Dr. T. H. Meyers, of New York.

OFFICERS FOR 1890.

President, Dr. DeForest Willard, of Philadelphia; Vice-Presidents, Drs. A. J. Steele, of St. Louis, and A. B. Judson, of New York; Recording Secretary, Dr. G. W. Ryan, of Cincinnati; Corresponding Secretary, Dr. Samuel Ketch, of New York.

Next place of meeting, Philadelphia, third Tuesday in September, 1890.

Medical Society of the District of Columbia.

Stated Meeting, March 20, 1889.

THE PRESIDENT, CHARLES E. HAGNER, M.D.,
IN THE CHAIR.

DR. J. FORD THOMPSON reported the following cases:

1. EXCISION OF THE KNEE-JOINT (PATIENT EXHIBITED).

C. A. C., æt. 23, white, American, and a carpenter by trade. Was struck on the inner side of the right knee with an adze, making an incised

wound involving the knee-joint. Inflammation ensued. He was treated by another physician for some time but kept getting worse and losing flesh and strength. When I first saw him the leg was flexed at right angles, there were several suppurating sinuses and the knee felt soft and boggy. On the 11th of December, 1888, I sent him to the Garfield Memorial Hospital, where I operated on the 13th.

The flap was made on the anterior surface and dissected back; the patella was removed, the diseased ends of the bones sawed off, and the diseased soft tissues removed. During the operation a stream of antiseptic fluid was constantly flowing over the wound. The ends of the femur and tibia were fixed by nails. The knee was then dressed antiseptically, and plaster dressing.

December 21. The dressing was changed and the wound looked well. December 23. The dressing was again removed on account of a slight elevation of temperature. From this time the recovery was steady and not marked by any untoward symptom. There was no pus in this case except where the nails were introduced, and these were removed in the third and fourth week. January 28. Discharged cured. Walking on crutches. March 20. He is present and walks with a cane.

About a year ago I reported to this Society a case of erosion of the knee-joint in a little girl 10 years old, in which recovery took place in five weeks. After the operation there was not any pus except along the line of the nails. In this case it was not properly an excision, as only diseased soft tissues and ends of the bones had been removed. I have never tried to get motion after erosion, although several cases have been recently reported in which motion was secured. I could not hope for motion in my cases and I question whether it would be proper to attempt motion. The operation of erosion is an improvement over the older practice of waiting until the tissues are so much diseased that excision is necessary. Excision is especially unsatisfactory in children, since if the ends of the bones are removed the limb will not grow. In an adult this will make very little difference, but in the child one leg would grow while the other did not, so that by the time the bone was through growing the shortening will be very marked. Erosion does not interfere with the growth of the bone.

About the time of the operation on the patient presented to-night I performed it upon a colored girl for tubercular disease of the knee-joint. She did not do very well, and as there were several sinuses I opened the joint a second time and spooned out all the diseased tissue that I could find. She is now up and about, but is in a hectic condition and does not get well. I think an amputation would have been better in the beginning, and it may be necessary yet.

2. INCISED WOUND OF THE ABDOMEN.

S. H., male, colored, æt. 28, Arlington, Va. This man was cut about 9:30 P.M. of May 7, 1888, and was brought to Emergency Hospital in a milk wagon from Arlington, Va., a distance of six miles, arriving at 12:30 A.M. of May 8, about three hours after receipt of injury.

I saw him within an hour after admission. He had been cut with a knife in a fight, the wound made being about 2 inches in length, extending obliquely downwards and outwards to the left, beginning just below the ensiform cartilage and the lower part extending nearly through the left cartilaginous border of the epigastric region. The patient, who was pulseless from shock, had been cared for by the house physician by application of hot bottles, hypodermatic injections of ether and arom. spt. of ammonia. Over the epigastric and umbilical region there was a large mass of abdominal contents, which upon examination proved to be the entire stomach with great omentum, and all of the transverse colon, the mass being tightly constricted at the wound, as in strangulated hernia, and covered with dirt. The protrusion was carefully washed with bichloride solution 1 to 2,500, and thoroughly examined for wounds, but none being found, a blunt-pointed bistoury was insinuated beneath the protrusion and the incision enlarged downwards for an inch or more, after which the parts were reduced by taxis.

I found it very difficult to close the wound nicely at its deeper part on account of its extending into the cartilages. I brought the peritoneum together first with catgut sutures, and then closed the wound with sutures passed as deeply as was practicable. Antiseptic dressing was used.

May 8. Temp. 100°; pulse 100; resp. 20.

May 9. Temp. 102.2°; pulse 114; quite tympanic. Coil was applied, and enema given, which produced good stool. Temp. was reduced by evening to 99.8°; pulse 98.

May 10. Temp. 100°; pulse 99.

May 13, evening. Sutures removed; pus oozed from suture wounds, and about 2 ozs. during night from wound. Milk diet and antiseptic dressing throughout. Recovery uninterrupted.

3. PERFORATIVE APPENDICITIS.

I was asked by Dr. J. W. Dunn to see this case at 8 P.M., February 21, 1889. There was a history of intestinal obstruction; he was very low and hiccough was incessant. I stated that it was a clear case demanding operative interference, but concluded to postpone it until next morning.

February 22d the patient was in about the same condition and I had the family advised of the extreme gravity of the case and advised immediate laparotomy. The patient was then anesthetized and an incision in the median line was made. Upon opening the peritoneum a milky fluid escaped and I thought the intestines

had been opened. The incision was then enlarged and about a quart of this fluid escaped. The pelvis cavity was filled with it. The incision was now lengthened upwards and the intestines were found to be adherent, of a blackish color, and looked gangrenous. They were gently manipulated. They were quite distended, and four punctures were made to draw off the fluids and gases; the punctures were closed with the Lembert catgut suture. In the cæcal region an abscess cavity broke and about five or six ounces of pure pus escaped. This cavity was then washed with a warm carbolyzed solution. At the caput coli the intestine looked healthy, but about two feet of the ileum seemed almost gangrenous, with numerous black, soft and leathery spots. In the abscess cavity a concretion like a coffee-grain was found, which I believed to be calcareous. The appendix and surrounding tissues having a gangrenous appearance, I thought it best to remove the appendix above the deeply congested part and establish an artificial anus, because I did not think the intestine could stand the pressure of the gases and contents. I also thought that if the patient survived the operation the artificial anus could be operated on successfully. He seemed to stand the operation very well, but died three hours after of shock.

I had never seen such a condition of the intestines. I did not know how the fluid got into the man's pelvis, nor its nature. It looked like the fluid injected into the rectum, but how did it get into the peritoneal and pelvic cavities? It did not pass through the abscess, as its walls were perfect. The case had been managed by one of the most capable female nurses I have ever seen, and she gave the enemata with the Davidson syringe, and not the long tube of other syringes, which is usually passed into the intestine while the operator is in ignorance where it is going. He suspected rupture in some portion of the intestine below the disease, but it could not be examined satisfactorily, and a post-mortem was not allowed to confirm the suspicion. The disease of the intestine was beyond all I had ever seen, and I do not know what caused it. In appendicitis there is no reason for the disease extending to such an extent.

If the man had had vitality enough to have survived the immediate effects of the operation, the artificial anus would have relieved the weakened bowel and he might have been cured by a subsequent operation.

I preferred the median operation because I supposed the trouble was obstruction, but it was fortunate that it was made under such a supposition, because it proved very advantageous. In appendicitis I perform the right inguinal operation. The diagnosis in such cases is very difficult and the best diagnosticians frequently fail.

I am impressed with the importance of the

early operation, and believe that it is too frequently delayed until the vitality of the patient is too much exhausted to resist the shock of laparotomy. In many cases the trouble is merely suspected and the physician waits for positive proof, which comes too late to save life. In all cases exhibiting peritoneal symptoms combined with those of obstruction the operation is imperative.

The case reported by Dr. McArdle, upon which I operated, has entirely recovered.

The history by Dr. J. W. Dunn, of this case, is briefly as follows: C. D., æt. 21 years, sent for me between 6 and 7 o'clock, on the evening of Feb. 11, 1889. I called about 8 o'clock, and elicited the following account of his illness: The day before (Sunday) had walked to Rock Creek cemetery and back again without fatigue. Upon his return had eaten a good dinner and enjoyed it. Monday morning about 10 o'clock was seized with a pain at the pit of the stomach, which was severe and lasted until he arrived home and had vomited his breakfast, which consisted of two soft boiled eggs, some bread and a saucer of preserved peaches with cream. The violent pain then disappeared. Vomited bile and mucus several times during the afternoon. Was given crushed ice and brandy, and when I arrived had not vomited for nearly two hours. Upon examination detected nothing abnormal, with the exception of a feeling of soreness over the region of the stomach. Said he was not ill but his bowels had not moved. I then ordered 1 grain of calomel in eight powders. One every two hours. Said he would send for me if he had further trouble. Temperature 98.6°; pulse 74.

Did not hear from him again until Friday, the 15th. Found him in bed, but had been up and around the house, and had eaten three meals a day. Said the soreness over the stomach had not gone away. Only felt it when erect, not when lying down. Was perfectly horizontal and free from pain. No pain on pressure over cæcum or in iliac region; thigh not flexed on pelvis; could extend leg freely and easily; no hardness; and abdomen uniformly tympanitic. Had not had nausea. Temperature 98.6° taken in the mouth; pulse 76. The calomel had not operated, and his mother had given him a dose of castor oil, which had moved the bowels three times freely. Gave sulphate of quinine 2 grains every 4 hours, and ordered turpentine stunes over bowels.

From this time until Monday the 18th, his condition remained about the same. Had two or three light colored and offensive movements daily. Abdomen tympanitic and slightly swollen. Tongue of a natural color, and white fur on posterior portion. On this date (18th), seven or eight dark red spots appeared over the lower portion of the chest, disappearing in twenty-four hours.

Highest temperature recorded 101.4°; pulse never over 96 per minute. Made diagnosis of "mild case of typhoid fever."

19th. Complained in the morning of nausea; bowels had not moved since evening before. Gave drachm doses of granulated effervescing citrate of magnesia, to be repeated every hour. This quieted the nausea, and at 9:15 P.M., produced a slight movement with quantities of offensive gas. At 10 P.M., the nurse gave an enema of one quart of warm water with soap-suds, which did not come away, and was repeated in one hour. 12:15 A.M., enema came away, bringing two hard pieces each, about three inches long. The nausea returned at this time.

20th, 2:30 A.M. Had severe pain in right side, came on suddenly and rapidly, subsided with applications of hot water and turpentine. Said the milk made him sick and vomited it with some greenish material and mucus three times during the day, viz.: at 11:45, 4:35, and 7 P.M. No movement during the day; 7 P.M., enema one quart, came away in thirty minutes, bringing four brown pieces and about two inches in length. The milk was withdrawn, and he did not vomit again. Pain in side did not return. Abdomen only moderately distended. No evidence of typhlitis or of perityphlitis. Was moderately tender on pressure on both sides. Principal soreness just below ensiform appendix. Temperature 101.2°, pulse 104.

21st, 2 A.M. Small movement, about 2 oz. of yellow fluid; 6:15 A.M., some yellow movement of about 4 oz.; 7 A.M., vomited about one pint of greenish material; after this seemed much better; 10:15, enema; slight movement with four small pieces; 4:30 P.M., vomited about 4 oz. of suspicious looking material, yellow in color. Had no marked fecal odor; 5:50 P.M., large enema (two quarts), came away hardly stained. Nurse stated that he had hiccough during the afternoon; 9:15 P.M., enema of one quart of infusion senna; came away in one hour, one small yellow piece. Abdomen swelled rapidly on 21, and was much distended by 6 P.M. Enemata with exception of a few small pieces, were hardly stained. Temperature 101.8°; pulse 108.

Treatment consisted of 2 grains of quinine every four hours for three days, after which no medicine but the magnesia was given by mouth. Suppositories of morphine $\frac{1}{4}$ grain were given occasionally to procure sleep. Hot applications over bowels constantly. Diet consisted of milk and liquid beef peptonoids.

4. TWO CASES OF STRANGULATED FEMORAL HERNIA.

Case 1.—I was asked by Dr. Busey to see Mrs. B., who had a strangulated femoral hernia of the right side, of several days duration. I examined her on Feb. 10, 1889, and found a small tumor,

resembling a gland, just below Poupart's ligament, and I advised an immediate operation. Upon opening the sac I found a small knuckle of intestine, so very much congested that it looked at first to be in condition of gangrene; but after irrigation with warm water its appearance improved and it was returned. The sac was dissected off and tied with double catgut ligature as high up as possible in the ring. A drainage tube was inserted into the peritoneal cavity through stump of sac. Patient recovered with bad symptoms. The wound healed by granulation. The patient had no fever, and she was given an enema on the third day, which brought away feces.

I think drainage is necessary in such cases as this for the radical cure of herniæ, and I expect a radical cure in those cases in which the sac is removed. In the following case also the sac was dissected out and the wound allowed to heal by granulation.

Case 2.—March 1 Dr. Koonen asked me to see Mrs. G., white, aged 37, the mother of one child 14 years old. She stated that she had been ruptured about six years previously, but that it had never caused her any trouble until about three days previous, when lifting a heavy barrel she felt a sharp pain in the right inguinal region, and that she had been vomiting for the past two days. On examination Dr. Koonen found a large femoral hernia, inflamed and irreducible. March 1, the operation described above was performed. March 2, temp. 100°, pulse 96; abdomen slightly tympanitic, and pain in right iliac region. March 4, temp. 96.6°, pulse 95. Had a natural stool. March 6, discharged cured.

In these cases the strangulated knuckle of intestine was enclosed by an omental sac. After relieving constriction the intestine was returned, the omentum transected and tied with catgut ligature high up in canal, and this large mass cut away. The sac was then dissected out, tied and cut off as in previous case. Drainage tube was inserted and antiseptic dressing applied.

Recovery without bad symptoms.

The concretion removed from the case of perforative appendicitis was referred to the Committee on Microscopy.

DR. KOBER: In the after-treatment, did Dr. Thompson desire to secure bony or fibrous ankylosis?

DR. THOMPSON: The operation is not complete unless there is bony union, as in case of fracture.

THE PRESIDENT: Some time ago he had seen a case of fracture of the patella by direct violence, in which there was subsequent union. Some time afterwards this patient, in an effort to break a fall, fractured the other patella, and union took place in it, making both limbs alike. He walks very well since the second accident.

DR. KOBER simply desired to direct attention to

the different results obtained so far as the mortality was concerned, when excision was performed for traumatic causes and when performed for disease. Of 116 cases of excision of the knee-joint, collected by Gurlt, there were 21 recoveries and 95 deaths, or 81.89 per cent. Whilst of 431 cases collected by Penieres, operated on for disease, 300 recovered and 131, or 30.4 per cent., died, showing a difference of 50 per cent. in favor of the cases operated on for disease.

DR. THOMPSON: Conclusions drawn from statistics of several years ago are of little surgical value nowadays. There has been such a revolution in surgery that the results now attained are far better than those for the same operations a few years ago. The case reported was traumatic, and still it got well without a bad symptom.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

Dr. Guéniot on the Causes and Treatment of the severe or obstinate Vomiting of Pregnancy—Dr. Marc Sée on Congenital Hypertrophy of the Right Lower Extremity—Prof. Gayet on the Wearing of Celluloid Artificial Eyes—Antipyrin in the Treatment of Enuresis—The Incompatibility of certain Antiseptic Substances.

At a recent meeting of the Academy of Medicine Dr. Guéniot read a memoir on the causes and treatment of the severe or obstinate vomiting of pregnancy. According to the author there are three principal factors concerned in the etiology of this form of vomiting, viz.: the uterus, the nervous system and the stomach, consequently it is against the alteration of one of these organs that the treatment should be directed. Thus, as regards the uterus, there may be ulceration of its neck, or a flexion of its body on the neck may be a source of irritation which reflects on the nervous system and the stomach and thus produces obstinate vomiting. On the other hand, it is possible that diseases of the ovum may cause the vomiting. The author had seen a patient who was the subject of a hydatiform pregnancy who was affected with obstinate vomiting. Some irritability of the nervous system might also reflect on the stomach. Finally, the stomach itself may be diseased, which would singularly predispose to vomiting. These etiological considerations should guide the physician in the treatment to be adopted. It is thus that in rectifying a flexion or deviation of the uterus, the raising of the hip combined with the lowering of the trunk is sometimes sufficient to arrest these persistent vomitings, and the application of a suitable pessary sometimes gives good results. If there be ulcer-

ation of the neck, topical remedies and even cauterization may be employed without fear of provoking abortion. If there is a tumor, it must be excised. If there is vaginismus, it must be combated by prolonged baths and the application of an ointment of cocaine. Even when an examination discovers no lesion on the side of the uterus, dilatation of the neck practised with the finger in multiparæ, with laminaria or a dilating instrument in primiparæ, would often arrest the vomiting. If there is irritability of the nervous system, enemata of the bromide of potassium or of chloral should be employed. The application of Chapman's ice bag to the dorso-lumbar regions of the spine, also gives good results. The ether spray to the spine and to the stomach, practiced just before meals, is often sufficient to check the vomiting. Inhalations of oxygen are also beneficial. If there be disease of the stomach, the patient must be subjected to a rigorous diet, all acidulous and alcoholic drinks must be suppressed. Ice, Vals or Vichy water, milk or beef tea to be taken often, but in small quantities at a time, may be allowed.

At the same meeting Dr. Marc Sée read a report on a case of congenital hypertrophy of the right lower extremity related by Dr. Duplony at the meeting of the 20th of August last. Dr. Marc Sée is of opinion that before practicing disarticulation of the thigh, the surgeon should try ligature of the artery, and he would strongly recommend the application of elastic compression, from which he had obtained excellent results in a similar case.

Prof. Gayet, of Lyons, reports that he had lately observed several cases in which the wearing of artificial eyes made of celluloid was attended with some inconveniences. Artificial eyes made of this substance have not the brilliancy nor the lifelike appearance of eyes made of glass or enamel, but they do not break, are easily adapted to the hollows and projections of the orbital cavity which has been modified, they are much cheaper. Patients may even, when granulations or adhesions are formed in the orbital cavity, cut the piece in such a manner that it will continue to well adapt itself to the orbital cavity. Thus it will be seen that these pieces in celluloid have certain advantages, but they have the great inconvenience of not being tolerated more than three or four months. At that time their chemical composition is probably modified by the liquids of the eyelids and of the orbital cavity, as well as by the tears which keep them constantly wet, so that the stump becomes red, granulating, painful, and gives rise to an abundant purulent secretion which compels the patient to abandon his artificial eye. Antiseptic washings may give some relief, but there remain the vegetations, which must be cauterized or excised. A cure is effected, but if the patient reapplies the artificial

eye of celluloid he soon returns for the same treatment. The author does not know where these artificial eyes are manufactured, but believes that they come from Germany. They are composed of two distinct parts. The sclerotic is of celluloid and contains at its anterior part a cavity in which is implanted a piece similar to that of eyes of glass forming the iris and the cornea. When the sclerotic becomes altered, at the end of three or four months, it sometimes acquires an odor of an extraordinary fetidity. This odor recalls that of bromine, and it is no wonder, as celluloid is made of the mono-bromide of camphor. It is therefore possible that the bromine at a certain moment is set free, and gives rise to this odor. Under the influence of the heat the sclerotic becomes altered and softened, the central piece (the iris and the cornea) becomes somewhat movable in its cavity, and there results a cutting edge on which rub the posterior surfaces of the eyelids.

Starting from the idea that enuresis is due to a spasm of the fibres which preside the expulsion of the urine, Drs. Perret and Devic treated two cases of essential nocturnal incontinence of urine, the one aged 11 years and the other 12 years, to whom he administered from 2 to 3 grams of antipyrin per day. The first case, which was that of a boy, was cured in ten days after treatment, and the second, a girl, was cured in fourteen days. Even after the suppression of antipyrin the enuresis was not reproduced.

The *Archives de Pharmacie* points out the incompatibility of the following antiseptic substances: Corrosive sublimate and iodine, corrosive sublimate and soap, carbolic acid and iodine, carbolic acid and the permanganate of potash, iodine and soap, salicylic acid and the permanganate of potash, permanganate of potash and oil, soap and glycerine.

A. B.

DOMESTIC CORRESPONDENCE.

Snake Bites—A Correction.

To the Editor:—In the issue of THE JOURNAL for September 28th I notice the following item, clipped from *The Southern Practitioner*, which is calculated to make a very false impression, at least in the minds of your northern readers, and to do our section of the State of Texas great injustice:

Dr. L. G. Lincecum, of Lampasas, Texas, reports that he has treated more than one hundred cases of bites inflicted by poisonous reptiles, and that he has never seen a case result fatally that was treated by the hypodermic administration of permanganate of potassium and the administration of chloroform locally and by means of inhalation. He gives the permanganate in 1 and 2 grain doses.

I have now practiced medicine in Texas eight

years, part of the time in the northwest portion of the State known as the Panhandle, and the last five and one-half years in Lampasas. I have treated four cases of bites from poisonous reptiles. My practice and acquaintance extend over a region of from fifteen to twenty miles in either direction from town. Two of my cases were in the Panhandle, the other two in this vicinity. I am in position to know of the occurrence of snake bites in any part of the county. I have heard of but two or three cases besides my two cases.

Dr. Lincecum has practiced medicine here for fourteen or fifteen years. If he has treated one case a year here it is far more than anybody here knows anything about in the practice of all the other physicians here. If he has treated "*over one hundred cases*," it certainly must have occurred before he came here—probably whilst he practiced in the city of Austin.

We do not deny but that there are venomous reptiles and insects in the State of Texas, but they are not as numerous as many are led to suppose, and bites and stings from them are of rare occurrence. There are physicians in Texas who have never seen a case of rattlesnake bite in a practice of years. Others, in certain localities, might treat two or three cases a year. There is no question in regard to the success of the permanganate of potassium treatment in these cases.

Respectfully, J. D. CARHART, M.D.,
Member of Texas State Medical Association; of the American Medical Association; delegate to Ninth International Medical Congress.

Erysipelas Complicating Pregnancy.

To the Editor:—In a paper read before the Indiana State Medical Society, June 6, 1888, on "Erysipelas Complicating Pregnancy," the following conclusions were based on an analysis of thirty-seven cases:

1. The nearer to full term the attack of erysipelas, the less danger of death and greater certainty of abortion or premature delivery.
2. That nearly all cases complicated by puerperal peritonitis die, while those not thus complicated get well.
3. That there is less danger of death to the pregnant in the later months of pregnancy suffering with erysipelas than to the parturient to whom erysipelatos virus has been conveyed, producing puerperal peritonitis.
4. That the dangers to the pregnant or parturient are greatest in the active invasive stage of erysipelas; that puerperal septicæmia is not so likely to follow those cases of abortion or premature delivery occurring in the retrogressive stage of the erysipelatos inflammation, and that the dangers grow less as the inflammation subsides, provided the system is not left in a condition favorable to a return of the erysipelas.

5. That the virus from all varieties of erysipelas should be considered dangerous to the parturient, regarding the intensity of the inflammation and time of development of the virus as greater factors for evil than the variety and situation of the erysipelas.

Seeing that my conclusions were incorrectly stated in an important publication of wide circulation, and desiring to further investigate the subject, this communication is sent for publication.

Wishing to see if a larger collection of cases will further establish the above conclusions, any of the readers of THE JOURNAL having had cases of erysipelas complicating pregnancy, are respectfully requested to report them to the writer according to the outline given below. Only cases of erysipelas occurring in the pregnant from the time of conception to commencement of labor are wanted, and not those cases of septic infection occurring after delivery.

Form.—1. Period of pregnancy at which erysipelas occurred. 2. Variety and situation of erysipelas. 3. Time of delivery as to stage of erysipelas and period of pregnancy. 4. Result as to death or recovery of mother. 5. Did mother have puerperal peritonitis or septicæmia?

To any one reporting cases due credit will be given, and a reprint of the article on the above subject will be sent to them if requested. Please send reports to,

Yours respectfully,
R. R. KIME, M.D.

Petersburg, Ind., Oct. 12, 1889.

Etiology of Tetanus.

To the Editor:—Recent articles and communications in THE JOURNAL on the contagion or microbe of tetanus, and its relation to the offal of animals, have added interest, in view of the occurrence of a case of tetanus which, during the week past, has in this city reached a fatal termination. The victim was a woman of advanced age, but of notably vigorous health. About two weeks previous to her death she had occasion to step into a poultry coop or enclosure, when a nail, concealed by dirt and offal of the poultry, penetrated the plantar surface of the instep. In a few days stiffness of the cervical tissues appeared, with the result stated. As many medical men in a lifetime of active practice fail to meet a case of this kind, so rare is the disease outside of hospitals, albeit rusty nail wounds of the feet are sufficiently frequent, the special circumstances of the etiology of this case are significant, as verifying the recent view of a microbe origin. The writer was not medically in the case, but is accurately informed of the above facts, and would regard their burial with the victim with disfavor.

Yours respectfully,

H. C. MARKHAM, M.D.

Independence, Ia., October 11, 1889.

NECROLOGY.

Dr. Charles W. Haddock.

DR. CHAS. W. HADDOCK, a well-known physician of Beverly, died Oct. 10, 1889. He was born at Hanover, N. H., sixty-seven years ago. His father was a clergyman and a professor in Dartmouth College, in which university the future physician was graduated. In 1847 he went to Beverly, where he won a high reputation. He was a member of the Massachusetts and Essex South District Medical Societies. He was surgeon of the 8th Regiment Massachusetts Infantry during its nine month's campaign in the Carolinas, and was surgeon of the 2d Corps of Cadets for several years. He had been medical examiner for the Beverly district since the office was created, and was chairman of the Board of United States Pensioner Examiners, having been recently appointed. His wife and one son, Dr. Charles W. Haddock, survive him.

MISCELLANY.

EPIDEMIC DISEASE IN BELFAST.—At a meeting of the Belfast Dispensary Committee on October 7, the reports from the various medical officers showed the existence of a large amount of typhoid and typhus fevers in the city. The outbreak of typhoid was attributed to the heat and drought of the early summer, succeeded by the wet weather of August. There is reason for thinking that a conjunction of circumstances of this kind does tend to have this effect. Happily, the epidemic is not of a severe type, and the mortality has been very moderate. Dr. Woodhouse, Local Government Board Inspector, stated his opinion that 10 per cent. of the death-rate was due to diarrhoea in infants, of which the causes were mainly two—wrong feeding and imperfect sanitation.—*British Med. Jour.*, Oct. 12, 1889.

LETTERS RECEIVED.

Dr. John A. Larrabee, Louisville, Ky.; Dr. A. B. Newkirk, Falls City, Neb.; Thomas F. Goode, Buffalo Lithia Springs, Va.; F. W. Koch, New York; Georgetown Medical College, Washington; Eli Lilly & Co., Indianapolis, Ind.; Upjohn Pill and Granule Co., Kalamazoo, Mich.; W. H. Moore, Brockport, N. Y.; Dr. George O. Mead, London, Eng.; Doliber, Goodale & Co., Boston; The American News Co., New York; Northwestern Ohio Medical College, Toledo, O.; Chicago Polyclinic, Chicago; Dr. J. Wright, Brooklyn, N. Y.; Dr. Robert Tilley, Chicago; Dr. J. H. Bryan, Washington; Dr. C. S. Curry, Newark, N. Y.; Dr. James Tyson, Philadelphia; Dr. Hermann Goldenberg, New York; Gladstone Lamp Co., New York; Lambert Pharmacal Co., St. Louis, Mo.; Lea Bros. & Co., Philadelphia; S. H. Parvin's Sons, Cincinnati, O.; I. Haldeinstein, New York; Dr. John V. Shoemaker, Philadelphia; Dr. W. H. Atkinson, New York; Oneita Springs Co., Utica, N. Y.; Dr. S. F. Cook, New York; Parmenter Printing Co., Lima, O.; John Wanamaker, Philadelphia; Dr. J. A. Webb, Voluntown, Conn.; Dr. R. Harvey Reed, Mansfield, O.; Malted Milk Co., Racine, Wis.; The Marlin Fire Arms Co., New Haven, Conn.; Dr. A. Vander-

Veer, Albany, N. Y.; Battle & Co., St. Louis, Mo.; Lovell Washer Co., Erie, Pa.; George F. Lasher, Philadelphia; Galvano-Faradic Manufacturing Co., New York; Dr. Benj. Lee, Philadelphia; Henry Schwindt, New York; Dr. George W. Ryan, Cincinnati, O.; Lehn & Fiuk, New York; Anthony S. Weriel, Chicago; G. P. Putnam & Co., New York; Dr. E. H. M. Sell, Allentown, Pa.; Dr. C. C. Hunt, Dixon, Ill.; Dr. Augustin A. Goelet, New York; Dr. Joseph H. Hoffman, St. Mary's, Pa.; Dr. W. L. Linn, Bowen, Ill.; Dr. George W. Stoner, Detroit, Mich.; Dr. H. L. Getz, Marshalltown, Ia.; Dr. M. Blumenthal, New York; Dr. Robert T. Morris, Lutz & Movius, New York; Dr. F. B. Davidson, Fleetville, Pa.; Dr. Chaillé, New Orleans, La.; Dios Chemical Co., St. Louis, Mo.; Wm. R. Warner & Co., Philadelphia; The Zymotocine Chemical Co., Springfield, O.; Dr. W. Freudenthal, New York; Dr. Jonathan Wright, Brooklyn, N. Y.; W. P. Cleary, New York; Dr. A. R. Baker, Cleveland, O.; Dr. A. S. Mygatt, Rolfe, Ia.; Dr. Samuel Hart, Marietta, O.; Dr. W. N. Yates, Fayetteville, Ark.; Dr. Thomas F. Rumbold, St. Louis, Mo.; Dr. Irving D. Wiltrout, Hudson, Wis.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from October 12, 1889, to October 18, 1889.

Capt. Louis Brechenin, Asst. Surgeon U. S. Army, relieved from duty at Ft. Laramie, Wyo. Ter., and ordered to Ft. Apache, Ariz. Ter. Par. 2, S. O. 241, A. G. O., October 16, 1889.
First Lieut. Alfred E. Bradley, Asst. Surgeon U. S. Army, relieved from duty at David's Island, New York Harbor, and ordered to Ft. Omaha, Neb. Par. 2, S. O. 214, A. G. O., October 16, 1889.
First Lieut. H. S. T. Harris, Asst. Surgeon U. S. Army, relieved from duty at San Antonio, Tex., and ordered to Ft. Keogh, Mont. Par. 2, S. O. 241, A. G. O., October 16, 1889.
Capt. Edward Everts, Asst. Surgeon U. S. Army, relieved from duty at Ft. Apache, Ariz., and ordered to David's Island, New York Harbor. Par. 2, S. O. 241, A. G. O., October 16, 1889.
Capt. W. R. Steinmetz, Asst. Surgeon U. S. Army, ordered for examination for promotion. Par. 3, S. O. 236, A. G. O., October 10, 1889.
Capt. Louis Brechenin, Asst. Surgeon U. S. Army, granted leave of absence for one month. Par. 1, S. O. 98, Hdqrs. Dept. of the Platte, October 12, 1889.
Capt. George W. Adair, Asst. Surgeon U. S. Army, leave of absence extended for fifteen days. Par. 15, S. O. 238, A. G. O., October 12, 1889.
Capt. Valery Havard, Asst. Surgeon U. S. Army, leave of absence extended one month. Par. 3, S. O. 240, A. G. O., October 15, 1889.
Major L. Y. Loring, Surgeon U. S. Army, sick leave of absence extended two months on surgeon's certificate of disability. Par. 16, S. O. 241, A. G. O., October 16, 1889.
Lieut.-Col. Anthony Heger, Surgeon U. S. Army, relieved from duty in Div. of the Atlantic, and ordered for duty as attending surgeon, Washington, D. C. Par. 2, S. O. 241, A. G. O., October 16, 1889.
Major Robert M. O'Reilly, Surgeon U. S. Army, granted leave of absence for six months, with permission to leave the United States. Par. 3, S. O. 241, A. G. O., October 16, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending October 19, 1889.

Surgeon D. W. Bertolette, detached from the "Franklin," and ordered to duty at Naval Hospital, Philadelphia.
P. A. Surgeon N. H. Rush, detached from Naval Hospital, Philadelphia, and ordered to the "Saratoga."
P. A. Surgeon C. T. Hibbett, ordered to the "Franklin."

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ADDRESSES.

THE ADDRESS DELIVERED BEFORE THE AMERICAN PUBLIC HEALTH ASSOCIATION,

At Brooklyn, N. Y., Oct. 22, 1889.

BY H. A. JOHNSON, M.D.,
PRESIDENT.

[Abstracted for THE JOURNAL.]

Gentlemen of the Association, Ladies and Gentlemen: Article second of the Constitution of the American Public Health Association declares that the object of this Association shall be the advancement of sanitary science and the promotion of organizations, and measures for the practical application of public hygiene.

In the furtherance of this object it has seemed wise that there should be at its annual meetings not only papers upon purely scientific subjects, but that also, in the form of essays or public addresses, an effort should be made to secure the interest and coöperation of those of our citizens who have no official or professional relations to the objects of the organization. In other words, to invite the support of all classes of society in the advancement of public health.

To do this we must demonstrate the truth of the maxim of one of our greatest philosophers that "Public Health is Public Wealth." I shall not, therefore, address myself so much to the scientist, the official and professional sanitarian, as to the people, who, by their presence here to-night, give evidence of sympathy and interest in our work—or rather their work—and to whom, after all, we must look for means to carry out such measures as science shall demonstrate to be for our race most beneficent. Through the ages but little has been done to prolong life and mitigate distress. We know now that much can be done, much that is not done, for the accomplishment of these results. The world has, however, in action, never utilized its fullest capacity for work; in achievement it has never reached its power to do. This is true along all the lines of social and public activity. It is no more true in preventive medicine than in other departments of public endeavor. The great

difficulty in the way of successful sanitation has been, and still is a want of adequate knowledge as to the causes of our suffering, and the agencies of our destruction, and a want of confidence in the measures proposed for relief.

Of the beginnings of this desirable kind of knowledge we know but little, but in old records we find some faint suggestions. We know that along the eastern border of the old Ægean sea, and skirting the coast of Asia Minor are numerous islands whose names are embalmed in song or story of ancient Greece. On a high promontory of one of these, in the dim twilight of antiquity, a temple had been erected to Æsculapius. A few miles back, at the base of a line of low hills, there gushed from the rock a stream of warm, life-giving water. Its properties were such as to invigorate and strengthen the wearied and exhausted, and to especially restore to the blood the qualities in which it is usually deficient in malarious countries. In a word, they were chalybeate. Rich in iron, they met most fully the needs of the dwellers along the shores of the islands and the continent, and the crowded cities of Greece. To this temple and fountain the sick from many lands had come, and there had been abundant opportunity to test the healing qualities of the waters. Those who had received benefit had hung upon the walls, or inscribed on tablets which were placed around the temple, brief histories of their diseases and the results of their offerings to God and Goddess. Here, in the fifth century before our era, a young student from a neighboring city, descendant of a long line of priest physicians, established his home. He was a lover of nature, and we may presume that he had been attracted in part by the beauty of the island, with its ridges of low mountains, or rather hills, which skirted the southern border, and which gave birth to cool streams of delicious water destined to give fertility to the northern slopes, the land of the grape, the home of the most generous of wines. The scholar had lingered, not so much for the beauty of the landscape, however, or for the delicacy of the fruits, as for the interest which he felt in the curative properties of the fountain itself. While he believed in the Gods, he was, nevertheless, a close observer of nature. Here in the temple had

already been established a school of medicine. The facts were the inscriptions just alluded to, placed upon the walls, left by those who had been cured by their visit to the temple and the grove, and in answer to their prayer to the deities of health and medicine. The young truth-seeker approached reverently the altar, but looked at the phenomena occurring under these influences as, nevertheless, the product of something in the world of matter. Time passed swiftly and happily in the pursuit of a more reasonable understanding of disease and its cause, and a more accurate knowledge of the instrumentalities by which it is modified.

His fame began to spread through the island and to the shores of Asia and Europe. Numbers came to consult him. His advice was sought in times of pestilence, and he had come to be regarded as one of the wise men of his age. Whether myth or history we know not certainly, but the story is that while he was patiently pursuing his studies and questioning nature, a messenger from the chief city of Greece landed upon the island. The angry gods, so the stranger said, had stricken in their wrath, the whole population. The peasant and the prince fell alike beneath the arrows of the destroyer. The chief ruler in his great distress had sent for the master. His favorite son had already fallen, and he himself had been accused by the people as the author of the scourge. He therefore prayed the learned man to visit the suffering city and advise what should be done to save, if possible, the remnant of the plague-stricken inhabitants.

In answer to the summons, the physician immediately prepared to leave his pupils, for he had already many such, and enter, as many of his followers have since done, the field of death. He gave a few simple instructions to those best fitted to carry on his work, and at once embarked. On reaching his destination, he found the city in a condition which the graphic pen of her chief historian has made to us so fearfully realistic. His first act was to note carefully the soil and drainage of the parts most severely afflicted. He also investigated the water sources. He studied the climatic conditions, and especially did he carefully note the occupations and habits of the inhabitants. He observed that filth everywhere abounded. While there was great magnificence in the architecture, and the palaces of the rich were in the most wonderful condition of adornment, there was beneath all this opulence of display a reeking hot-bed of foul matter giving off the most disagreeable and offensive odors. Under his advice there was an effort made to purify, as far as possible, the atmosphere. The city was besieged by an enemy, and the thickly crowded metropolis did not present a promising field for sanitary work. In the meantime, the great ruler, broken with his many cares and ill-

requited labors, was himself prostrated. The end was soon reached, and the greatest of the Athenians, Pericles, was among the immortals. Hippocrates returned to Cos, there to ponder upon the lesson which had been opened before him in the plague of Athens, and to write his book on "Airs, Waters and Places," the oldest treatise of which we have any knowledge on hygiene or public health. We find stated in it with almost the definiteness of modern sanitary science, the great importance of pure water, as well as some of the diseases which are likely to result from the presence of filth. From the time of the father of medicine to the revival of learning in the fifteenth century, we have but very little progress in the work of saving life. The older doctrines as to the cause of disease, whether among pagan or Christian people, were not encouraging to efforts in this direction. It has, therefore, come to pass that measures looking to the prevention of disease by the use of scientific methods, are modern.

BUT LITTLE DONE DOWN TO RECENT TIMES.

The maxims of Hippocrates, the ceremonial of the Hebrew law as to bathing, and the establishment of quarantines, are almost the only exceptions. For the most part suffering has been regarded as an infliction of the gods, or, among Hebrews and Christians, as a dispensation of Divine Providence. . . .

So long as life and its disorders were made to depend upon the unknowable, but little encouragement could be found, in fact for an effort to prolong the one, or to prevent the other. Even the materialists were content with phenomena, and wearily warred with existing conditions. Slowly with the revolving centuries better notions of the conditions of life have been reached. A better understanding and observation of sanitary laws has been brought about. Gradual changes in the modes of living and larger means of comfort on the part of the people have been accomplished. With all these improvements something has been done towards increasing the length of life. We have, as a race, made some progress, and by surviving we have demonstrated our fitness to survive. We do not know accurately the death-rate in the earlier centuries, but we do know that famine and pestilence carried away its hecatombs. As we come to more recent times we reach some approximation, at least to accuracy. In the seventeenth century, and for some hundreds of years before, the population of England and northwestern Europe had remained, if not stationary, with only a very slow growth. The cities, it is true, increased in population, but this increase could only be appreciated by comparing periods separated by many years. The agricultural districts very slowly became occupied. Life was short

and its product small. After the revival of learning, that great awakening of the sixteenth century, however, life became more valuable, and it was worth while to make a greater effort to save it. In the diaries of individuals and in the writings of medical men, we find some information, meager it is true, but some statements as to the life movements of the dead old centuries.

A few facts in the sanitary, or rather unsanitary, history of London during the seventeenth century, are suggestive of what was frequently taking place over all the then civilized world. These facts also give us a satisfactory explanation for the slow growth of the population of that century as compared with the nineteenth.

In 1625, a writer says: "The plague caused the death of 5,000 a week during a part of the summer." In 1665, July 16, he writes: "There died of the plague in London this week 1,100." In the week following, 2,000. August 8, he writes in his diary, "Died this week in London, 4,000." August 15, the same summer, "There perished this week, 4,000." He seems to have left the city for awhile, for on September 7, he says, "Came home. There perishing nearly 10,000 poor creatures weekly."

Sydenham, a very reliable medical authority, says of the same summer: "There died in one week 8,000, while two-thirds of the population were out of the city." The population is not certainly known, but probably at the time referred to was not more than half a million, as it was only something over 800,000 at the beginning of the present century.

Small-pox also ravaged the cities of Europe in winter, while plague decimated them in summer. In 1695, a reliable writer (Pepys) says, casually, in the discussion of other subjects: "The deaths were from small-pox increased to 500 more this week than last." What should we think in Brooklyn to-day with 500 deaths more this week than last from small-pox, with the probabilities that last week the number had reached into the thousands? But for vaccination, such might be our experience. The same writer comments upon the fearful spectacle in the streets of London. "Almost everyone," he says, "who has survived this scourge, was scarred and pitted by the pestilence and presented the most ghastly appearance." There was no effort to escape it except by flight to the country. It was believed that the epidemic constitution of the air, another unknown and mysterious quantity, made the plague a necessity once, at least, in thirty or forty years. Small-pox was always present and caused the death of one-sixth of the population of all the larger cities. The death-rate was greater than the birth-rate, and the population of London and other cities was maintained by a constant influx from the provincial districts. During all this time, the means of communica-

tion were few and *a priori*, we should not expect contagious diseases to spread with anything like the degree of rapidity made possible in this age of railroads and steamships.

ADVANCES IN THE LATER YEARS.

How much the death-rate has been reduced in England in the last two hundred years, we do not certainly know, but there is reason to believe that in London it has diminished from forty or more in the 1,000, at the beginning of the present century, to about one-half that number. The plague is a grim spectre of the dead past. Small-pox is a Samson shorn. The increase in population has been correspondingly rapid. I think we may safely infer that the diminution in the death-rate and the increase in the population throughout Great Britain has borne some proportion, at least, to what has been accomplished in the metropolis. This increase of population has taken place notwithstanding the fact that during the last half century, millions have come from the British Isles to our own shores, while yet other millions have found other homes, and yet the work-shops of Britain are beehives, and the hill-sides of merry old England teem with industrious workers. A great change has been wrought in this last three-quarters of a century. We know much more accurately how long people live, from what causes they die, and at what ages they die. We begin to see more clearly how the death-rate can be still more reduced. If we follow the course of a given number of individuals from birth to death, as we can well do by the aid of statistical tables, we shall find that in England and Wales out of one million persons born, more than one-fourth die in the first five years. If we divide the country into healthy and unhealthy districts, grouping together the different cities and counties according to the death-rate, we find that in the healthy districts only about one-sixth of the million die within this first period of five years, while in the unhealthy districts, of which Manchester may be taken as a type, nearly one-half of the million born, die within the first five years. In other words, of a million of children born in the unhealthy districts, more than 280,000 die within the first five years for the want of proper sanitary care; 280,000 would have lived beyond this five years if they had been born in the healthy districts.

The same startling contrast between the worse and the better districts, will meet us if we study the later life history of this 1,000,000 of human beings.

By coöperation on the part of the people the unhealthy districts might be made as healthy as London, and as the other provincial towns and shires in which the death-rate is so low. In fact, Liverpool has within the last twenty-five

years been transformed. It was one of the most unhealthy, it is now one of the most healthy of English cities. The application of money by scientific methods might change all this, and prevent this fearful slaughter of the innocents. . . .

LEGISLATION BASED UPON KNOWLEDGE.

The other field, and the one to which I more particularly desire to call attention, embraces the problems of public health. Society has always recognized certain evils growing out of aggregation, and has sought to control these evils. By legislative enactment and the establishment of police regulations, an effort has been made to secure the greatest good to the greatest number. Persons and property have been protected, crime has been punished; and mainly with the motive to prevent crime. In these later years the obligation of the public to protect, not only the worldly goods of the citizen, but also his health, begins to be realized. An intelligent foundation has been laid for sanitary reforms. These consist first, in the collection of statistics by which the value of certain procedures may be determined. The registration of births, deaths and marriages, the causes of death, the collection of information as to prevailing diseases, the collection and preservation of meteorological statistics, the collection and tabulation of statistics of the movements of the people, emigration, the growth of cities and States—all these accumulations serve as material out of which may be developed more accurate knowledge and better methods. Governments begin to recognize a responsibility in these matters. But for the most part, legislation is still crude, and the administration of sanitary laws full of blunders. In this respect the history of sanitary enactments and their execution does not materially differ from that of other social and political reforms. It is the want of accurate knowledge that leads to our mistakes of legislation; the want of practical acquaintance with the methods of administration that leads to the blunders to which we have referred.

As our oldest literature on sanitation was born of the pestilence, so our legislation has been stimulated by epidemics and has for the most part been provisional. Wise legislation must be based upon knowledge, knowledge on the part not only of professional sanitarians, but knowledge on the part of the public. It cannot be expected that this general or public knowledge will be technical; it must be general and related to the results that can be reached by scientific means and methods. A knowledge that begets faith in the agencies of protection and that secures efficient coöperation, and not, as has been too often the case, obstruction in the execution of sanitary laws. There are dangers, however, in this field of work, as in most others, that grow out of a smattering of knowledge. There will always be

those who claim too much, who speak as having authority, but have not the wisdom to see the limitations and difficulties in the way of practical results.

While, therefore, we should by all possible means strive to instruct and interest the great public in the work of preventive medicine, the task of devising the means and methods must remain in the hands of those who have special knowledge of these matters. These specialists should not be taken wholly from the profession of medicine. As an illustration of what a layman may do, I have only to mention the name of England's greatest sanitarian, Mr. Edwin Chadwick. Through a long life he has devoted himself to the work of improving the condition of London and other English districts, and it is safe to say that during the last fifty years his services have in value not been excelled by those of any Englishman in even the highest position of official or social life. What we want is on this side of the ocean such men as Mr. Chadwick. If we are to reach that measure of success which we believe to be possible, the world must not be left entirely to the medical profession or to health officers.

The egoism that leads manufacturers and others engaged in the various industrial occupations to ignore, in their eager pursuit of wealth, the public welfare, will always be an obstacle to the enactment and execution of health laws, but this general enlightenment on the part of the public which we so confidently look for, will compel obedience to these as well as to other forms of police regulation.

WHAT HAS BEEN DONE IN THE WAY OF LEGISLATION?

It is only within the last few years that sanitary organizations have come to be recognized as a necessary part of the machinery of State. Within the memory of many here present, there was not an efficient board of health in any city or State of this country, or in fact of the world. Police regulations establishing quarantine, it is true, existed, but these quarantines instead of being beneficent in their character, were often useless, and in many instances they became monstrous crimes against humanity. All this is being changed. Society recognizes its obligations in two directions: First, to remove from its midst or destroy every possible source of disease, and to so control the causes that cannot be removed or destroyed as to diminish to a minimum their deleterious influences upon public health. Secondly, the obligation to prevent the introduction of diseases from without, by such measures as shall be found the most efficient for the accomplishment of this end, and at the same time work the least amount of inconvenience to the social and commercial interests of the community.

For the accomplishment of the first purpose we have already done something, but there remains much more to be done. There should be in every town or city or district a health authority. Under the direction of this authority there should be a survey first made with a view to determine the presence or absence of the physical conditions that unfavorably affect health. This study should include not only the natural conditions, such as the climate, soil, exposure to sun and air, neighborhood, including water, wood and elevation, etc., as suggested by Hippocrates many centuries ago, but it should also embrace the condition of the population, their nationality, occupations, dwellings, density and food. It should also show the methods of removal of accumulations and, in the more populous districts, the disposal of sewage, the condition of streets and alleys, and the character of drinking water. There should also be noted any special industries by which air or water may be contaminated. The bearing of most of these different industries upon public health is now well known. In addition to these studies of the surroundings and the activities of the population, there should be a careful collection and preservation of the statistics of births, deaths, marriages, the prevailing diseases, the causes of death, and the increase or decrease, if such be the case, of population. This is only a suggestion of a few things that should be done, and these should be done in the smaller towns and villages, as well as in the larger cities. . . .

WHAT REMAINS TO BE DONE.

It appears that the death-rate of twenty-six of the principal cities of America, with a population of 9,873,448, is 20 per 1,000. I think it morally certain that this rate could be reduced, by means and methods *now known* to sanitary science, to 16 per 1,000, and probably still less than that. The death-rate for London for the year 1888 was 18.5 per 1,000. This can be still further reduced. That of New York and Brooklyn for the same year, taken together, was 25.5 per 1,000—New York 25.9, Brooklyn 23.7. The death-rate of these two cities, if reduced to that of London, would secure a saving of 7 per 1,000, or, annually, 15,986 lives. These lives are public wealth.

But this is not all. For one death annually two persons are sick during the entire year; or, in other words, there are two years of disabling sickness to one death—31,972 years, in New York and Brooklyn, of sickness, preventable sickness, annually. The value of these years of sickness cannot be reached with accuracy, but the wages lost on account of sickness, the cost of care and maintenance during sickness and convalescence, and the money value of the lives destroyed, considering them only as machines, will in New York and Brooklyn reach annually into the millions.

I venture to suggest to the business men of these cities that this loss is enough every year to buy a great railroad, or to build and subsidize a fleet of ocean-going steel steamships.

The sorrow of 16,000 homes, the years of grief, and the 32,000 years annually of anxious watching and waiting over the sick-beds of those who finally recover, are not taken into this estimate. Such considerations do not, except spasmodically, move legislatures or executives. It is only as these touch property, only as epidemics interrupt commerce, that we are able to secure efficient legislation. I firmly believe that the death-rate of nearly all our large cities may be reduced 3 to 4 per 1,000 from the present rate. I am fully satisfied that this might be accomplished in our chief cities, and that sickness might be diminished in a corresponding degree.

This lengthening of years, this relief of distress, this saving of public wealth, is worth working for. What is true of the cities is, to a great extent, true of the rural districts. All over our broad land are farm-houses and small villages which become every year the seat of diseases that grow out of filth. Foul drains, foul water, badly constructed and ill-ventilated dwellings and school-houses are the cause of thousands of deaths every year—deaths that might be prevented by the application of acquired knowledge upon this subject. Sir James Paget, before the London Health Exhibition, discusses the problem of national health, and very conclusively shows that among the wage-earners of England and Wales probably one-fourth of the sickness is preventable. Of the 20,000,000 of weeks lost by about 15,000,000 of the population, 5,000,000 weeks, or more than 95,000 years of work might be saved. This estimate is based upon the population between 15 and 65 years of age. The extension of this computation of sickness to all ages in Great Britain and Ireland would present us with a most startling array of figures. . . .

Up to the present time these problems of public health have received but little attention at the hands of statesmen; but it is no longer a question of possibilities, it is certain that this great saving of the best kind of public wealth is within our reach. It may not be accomplished by methods hitherto used, but the result is possible by methods that are known and which we know how to adopt. What we want is a recognition of the evil, and a disposition to invest at least a very small percentage of the loss in money value of life and work—wasted life and work—for the purpose of preventing this waste—hardly more than would be paid for the insurance upon our public buildings, or upon our dwellings in proportion to the value of the buildings themselves. . . .

We do not know with certainty how long life may be prolonged, but we are morally certain that it may be extended much beyond its present

limits, and with a fair degree of usefulness. It is believed that its normal limit is about 100 years. Instead of about 40 years under the most favorable conditions, as at present, it is quite probable that 60 or more years should be attained by the best use of the means now known; that is, the average should be 60 or more years. With a better understanding and more faithful observance of health laws 40 additional years should be reached. This obedience to law, this adjustment of our surroundings and regulation of our whole being, mind and body, in accord with the conditions of physical health, will prove to be the only true elixir of life. . . .

The future is full of hope. Everywhere science with the microscope and the crucible is following the germs of disease and the agencies of death. Politicians even are beginning to think it is worth while to preserve the lives of their constituents. The great public is beginning to believe that something more potent than fasting and sackcloth can be devised for their protection from pestilence and the grave. Let us all work together and we can do much even now, and in doing what we know how to do we shall find out other ways to do still greater things. So shall we lengthen the cords and strengthen the stakes of the great tent of life, under which the cry of distress and wail of bereavement shall become ever less and less; while in swelling chorus shall be heard, through the ages, the laughing of children, the sweet voices of young men and maidens, and the strong words of old men and matrons.

4 Sixteenth street, Chicago.

ORIGINAL ARTICLES.

THE CURE OF HERNIA BY THE USE OF THE BURIED ANIMAL SUTURE.

Read in the Section of Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association held at Newport, R. I., June 25, 1889.

BY HENRY O. MARCY, A.M., M.D., LL.D.,
OF BOSTON.

This paper is offered as a clinical study of operative measures for the cure of hernia. The cases reported represent all the usual varieties and were operated on during the eight months ending with April, 1889.

Case 1.—J. R., aged 45, an invalid for years from a large scrotal tumor. I had twice aspirated a few ounces of bloody fluid. There was also disease of the testicle. From the external ring there was a firm mass the size of the fist, continuous with the scrotal tumor. He had consulted several physicians, including members of the surgical staff of the Massachusetts General Hospital. Diagnosis uncertain, perhaps a malignant tumor; operative measures inadvisable. I operated

August 29, 1888, assisted by Dr. S. N. Nelson, of Boston. Removed the diseased testis; opened the hernial sac, which was found to contain only compressed omentum. Its folds were adherent, but were separated into the specimen here shown, which measures 6x8 inches. It was sutured across at its base, freed from adhesions to the internal ring, and divided. The stump was returned within the abdominal cavity. The large peritoneal sac was everywhere closely blended with the external tissues and was dissected with difficulty. It was freed to within the internal ring, well drawn down, and sewed evenly across at its base with five or six continuous sutures. This was excised and the closed peritoneum replaced within the ring. The internal ring was closed with a deep layer of double continuous tendinous sutures. A second layer of sutures was continued in the same manner, approximating the structures external to the pillars of the ring. The scrotal tissues were also closed by layers of buried continuous animal sutures. The skin was approximated subcutaneously by a blind stitch and the wound sealed with iodoform collodion. The operation, as were all of the entire series, was performed under strict antiseptic precautions, including continuous irrigation with a 2% solution. The wound healed without suppuration or even in any degree scrotal œdema. The patient was free from pain almost from the first.

At the discussion upon the subject of the cure of hernia in the Surgical Section of the Suffolk District Medical Society, January, 1889, Mr. R. kindly consented to be present and let the result be seen. The wound remains firm to date, the patient has resumed his ordinary occupation, suffers no inconvenience, and has not worn a truss. The sac in the specimen presented is stuffed with cotton and exhibits the peritoneal surface, in order to show the extraordinary changes that occurred in the development of its fibres.

Case 2.—M. H., aged 30, patient of Dr. C. W. Stevens, of Charlestown; is of exceptional physical development, fond of athletics. A large scrotal hernia of the right side, which for a considerable period has been irreducible and painful; incapacitated him at times for any labor. Had previously worn a variety of strong trusses with inability of retention. I operated September 29, 1888; opened sac, which contained an easily reducible loop of intestine and a large mass of compressed adherent omentum. The ring admitted two fingers. The operation was conducted as in case 1, except that, in the closure of the ring, the cord was gently lifted to one side and the internal ring closed from below upward, closely upon the cord at its entrance within the abdominal cavity. This was done in order to restore the obliquity of the canal. The cord was then replaced, and with the same suture the pillars of the ring were closed

down externally upon the cord, quite to the level of the external ring of the opposite side. The patient made a rapid recovery, the tissues uniting by first intention without œdema and almost without pain. Recent examination showed a slight bulging of the right inguinal region, but without opening of the canal. On account of a feeling of weakness and to prevent further yielding of the parts, he has been fitted by Dr. Codman with a light truss, which he wears with comfort.

Case 3.—J. M., age 55, coachman. He had been troubled with a right inguinal hernia for a long time, complicated with hydrocele, for the relief of which he has been frequently tapped; fluid withdrawn at the Massachusetts General Hospital a few days previous to operation, October 4, 1888. He was unable to reduce the hernia, and after two days of severe vomiting, the latter part of which was stercoraceous, he sought surgical aid. Taxis under ether proved unavailing. Assisted by Dr. H. D. Didama, of Syracuse, N. Y., I divided the constricting ring, restored the hernial contents and completed the operation for radical cure. After rallying from the ether the patient was taken in a carriage to his home, where he remained in bed two weeks, almost without attendance, but he made a rapid and painless recovery. He was also exhibited at the meeting of the Suffolk District Society above referred to. Although the hydrocele has twice refilled to inconvenient size, he remains entirely without discomfort from the hernia, has not worn a truss, and is actively at work.

Case 4.—S. N., physician, age 31, upon whom I operated for the cure of an inguinal hernia of the left side in the autumn of 1886, which has remained firm up to the present time. During the summer of 1888 he first noticed a slight bulging of the right side, for the support of which he applied a light truss. Notwithstanding, the hernia rapidly became scrotal and irreducible. I operated October 12, 1888, assisted by Dr. H. D. Didama. The sac was thickened, everywhere adherent, and dissected with difficulty. The loop of the intestine was easily reduced, but a considerable amount of omentum was adherent, and so changed that it was removed. The specimen here presented is interesting because of its rapidity of formation. The patient suffered extremely from pain in the back on account of confinement to the bed. For this reason he was allowed to sit in a reclining chair each day after the first, and in two weeks from the operation walked a quarter of a mile without inconvenience. The side feels perfectly firm at date. He has not worn a truss.

Case 5.—Mrs. J., age 40, entered private hospital on account of ruptured cervix and perineum. She had suffered also for years from a femoral hernia of the right side, easily reducible, but

which was imperfectly retained with a truss. In addition to the operations for repair of cervix and the perineum, I removed the hernial sac December 3, 1888, which is here exhibited. The recovery was rapid without any unfavorable symptoms and the patient remains cured at date.

Case 6.—G. S., age 40. The general health of the patient excellent, but for years he has been incapacitated for active labor because of a large left inguinal hernia, complicated with a varicocele. The scrotal tumor is so large as to extend at times quite one-third to the knee. The hernial tumor is imperfectly retained by a truss, the pressure of which causes pain by impeding the venous outflow. Assisted by Dr. H. D. Didama, of Syracuse, N. Y., I operated December 4, 1888. In addition to the operation for the radical cure of the hernia I dissected and tied the veins of the scrotum in three different places, some of which were varicosed to the size of the little finger. The wounds healed without œdema or suppuration, but the scrotum remained somewhat tender to pressure, and the patient still wears a suspensory bandage. The patient remained in the hospital three weeks and was discharged cured. No return of or inconvenience from the hernia, and no truss has been worn. Is actively at work.

Case 7.—Mrs. J. S., age 43. For many years has suffered from a right femoral hernia, for which she had worn a truss. For the last year she had noticed a tumor in the groin, something larger than a hen's egg. At times it is painful and always a source of discomfort, is slightly tender to the touch, and does not diminish under pressure. Femoral canal admits the tip of the little finger. Operation performed January 2, 1889. Sac contained clear serum and was continuous above through the femoral canal with the peritoneum, but its cavity had been obliterated under the pressure of the truss, thus reducing it to the characteristics of a simple cyst. This I removed and closed the ring. Rapid primary union followed, and the cure remains complete without support. Specimen exhibited shows the intimate adhesion of the sac to the surrounding tissues.

Case 8.—Mrs. B., age 34. Has for a long time been a semi-invalid from a right femoral hernia, for which she has worn a truss. In preparation for moving she lifted more than usual, causing the descent of the hernial tumor, which immediately produced great suffering, with faintness and vomiting. The physician summoned to her relief attempted the reduction of the tumor by taxis, which he continued more than an hour. His efforts proved unavailing and he left the patient with directions to use opiates and hot fomentations. I was summoned twenty-four hours later, January 31, 1889. At once I removed her to hospital, etherized and operated. The ring was divided with difficulty and several inches of congested

intestine liberated and returned. The patient made an excellent recovery, although between three and four months pregnant at the time of operation. She remains cured at date, although nearing her delivery. She has not worn a truss. The sac here exhibited shows the constriction of the neck, through which a piece of rubber tubing has been passed.

Case 9.—Strangulated umbilical hernia, five days' duration; patient of Dr. J. H. Parks, of East Boston. Case came under his observation only a few hours prior to his sending for me in consultation. Stout Irish woman, aged about 50. For some years had suffered from an umbilical hernia, double fist's size, a portion of which for a considerable period had been irreducible. Stercoraceous vomiting had continued for two days. Operation considered permissible, although the result would be doubtful. The thin-walled integuments covering the tumor were sphacelated. The hernial contents were found to consist of a large mass of adherent omentum, within which a considerable loop of small intestine was incarcerated. The constriction was easily divided, but the intestine was gangrenous and tore asunder under gentle traction. The ends were brought out from the wound, resected, and coaptation affected by means of a double row of continuous Lembert sutures. These were easily and rapidly applied and the divided mesentery united in continuous suture. The parts were well washed with hot sublimate and returned within the abdomen. The hernial sac was resected and the abdominal wall closed in layers by continuous tendon suturing, as after an ordinary laparotomy. When partially recovered from ether regurgitating vomiting occurred, several pints of dirty fluid, which was so continuous as to impede respiration and, despite all efforts, proved the cause of death. In order to anticipate such a possible accident it had been the intention to wash out the stomach prior to etherization, but in the hasty preparation the stomach tube had been unfortunately forgotten.

Case 10.—I. J., aged 75. Strangulated left inguinal hernia. Retired sea captain; general health good. Has for years suffered with double inguinal hernia, imperfectly retained by a truss. About four weeks prior to operation the left hernia became strangulated and, under ether, was reduced with difficulty. I was summoned shortly after the strangulation occurred. Failing in taxis I operated at once, March 7, 1889, assisted by Drs. Nelson and Cook. The tumor was double fist size and reduction was effected only after a wide division upward of the constricting ring. The sac contained about fifteen inches of small intestine, closely adherent by lymph exudation, probably dating from the strangulation of four weeks previous. Adhesions broken down prior to the return of the intestine into the ab-

domen. Vomiting ensued soon after the close of the operation, and insufflation of a portion of the liquid contents into the bronchi well nigh caused death. Acute pneumonia supervened, which caused the greatest anxiety for the two subsequent weeks. Although the strain from coughing was severe, the sutures did not yield, and yet, ten days after the operation, a considerable portion of devitalized, broken-down tissue was exfoliated. Repair went on satisfactorily by granulation, although the recovery was necessarily protracted. A considerable depression marks the site of the wound, but the abdominal wall is firm and unyielding. The patient is actively about, wearing a truss to support the opposite side. The accompanying specimen shows the everted sac stuffed with cotton and nearly fills a quart jar. The peritoneum affords an interesting study.

Case 11.—Mrs. P. Right femoral hernia. I operated upon the lacerated cervix and restored the perineum at the same sitting, April 17, 1889. Recovery rapidly followed, the patient apparently suffering little or nothing more from multiplicity of operations. Union in each primary. Specimen exhibits an interesting condition of the changed peritoneum. The patient returned home, several hundred miles distant, at the expiration of three weeks, and reports condition satisfactory.

Case 12.—Right scrotal hernia. Patient aged about 60, inmate of the Soldiers' Home at Chelsea because of this disability. Operated upon by Dr. Nelson and myself April 10, 1889. Sac everywhere adherent. Dissected with difficulty. Obliquity of canal restored. Recovery slow, but result reported as satisfactory. The accompanying specimen exhibits the peritoneal sac most remarkably reinforced by interlacing bands of hypertrophied connective tissue.

Case 13.—Right femoral hernia. Female aged 27; seastress. Hernia retained imperfectly by a truss. Disability and suffering very pronounced. Operation April 27, 1889. Recovery rapid; discharged from the hospital at the close of the second week, and she has resumed her ordinary occupation.

Case 14.—Miss N. C., aged 28. Large ventral hernia. In August, 1886, I removed a multiple ovarian cystoma weighing about 30 pounds. Incision was 3 inches in length. Wound closed by interrupted sutures taken through the entire thickness of the abdominal wall. Following the recovery the patient rapidly gained 40 pounds in weight. Ventral tumor at time of operation, May 10, 1889, nearly the size of an adult head. Resected the sac and closed the abdominal wall by continuous tendon sutures in four layers, the skin with blind stitch. Sealed the wound with iodoform collodion, as in all the previous cases. Patient made rapid recovery and was discharged from the hospital in two weeks, wearing an abdominal support. The specimen of the cyst

shown, exhibits remarkable diverticuli. The lower portion of the sac was filled with a mass of adherent omentum.

The series of cases reported above, operated upon within eight months, include all the usual varieties of hernia. They complete a list of operations, now numbering nearly 100, which I have performed during the last eighteen years. The method followed, from the first, has been subject substantially to the same factorage, although varying somewhat in detail.

Since I have recently given to the profession my views upon the conditions, symptoms and treatment of hernia at length,¹ I shall limit myself in this paper to a brief discussion of what I deem to be the essentials of the operation for the cure of hernia. I do this with the greater interest and pleasure since the cure of hernia is confessedly an opprobrium of surgery, and it is not until a very recent date that surgeons in either Europe or America have been willing to discuss seriously the advantages to be derived from operation.

In 1878 I first reported to this Association my method, illustrated by a series of cases with specimens, which have been supplemented, from time to time, by further contributions until the present. The basic and fundamental factor consists in closing the divided and weakened structures by strong sewing with a carefully prepared animal suture after the removal of the sac. This is aseptically applied and approximates the refreshed tissues by layers of buried suturing, so as to avoid the necessity of drainage, and thus allows of the complete closure of the wound, hermetically sealed with iodoform collodion, a very simple, but germ-proof dressing. I first published it in the *Boston Med. and Surg. Jour.* in 1871. My first case thus operated upon was in 1870. In this case the use of the buried suture was accidental and applied to serve a temporary purpose, but a permanent cure resulted. After mature deliberation I judged it sound surgical practice thus to attempt the cure of hernia, and other equally successful cases thus treated soon followed, the first fruits of my personal instruction received from Prof. Lister in Edinburgh, in 1869. He had limited his studies at that time to the results of the ligation of arteries by catgut left buried in the wound. I extended the use of the catgut ligature to the approximation of tissues, and made a series of experimental studies in animals upon the changes in the tissues which ensued. I determined that, when properly prepared, if aseptically applied, they were slowly replaced by bands of living connective tissue, and thus served an important purpose in the reinforcement and strengthening of the parts involved. The use of

the suture thus applied to hernia, is naturally of very great value for the approximation and retention of all wounded surfaces. In aseptic wounds it now promises to do away entirely with drainage and the multiplicity of antiseptic surgical dressings.

Under the new régime of surgery, in competent hands, the claim for operative measures for the cure of hernia may be strongly made:

First.—It is eminently a safe operation. In my own experience, extending through all these years, in all cases operated upon where the integrity of the intestine was not involved, I have not had a fatal case, or one where it appeared that even the danger line was in any way approached. In my recent work upon hernia above referred to I have collated, as far as possible, all the reported cases of operation under aseptic precautions. From the reports of recent operators I find 779 cases of hernia which have been operated on for a variety of causes, with only five deaths, and these are explained as having resulted from conditions not referable to the operation. This contrasts so extraordinarily with the earlier experience of the profession, when, usually, all hernial operations were septic and peritoneal infection the rule, often followed with fatal issue, that the modern operation for hernia may be claimed as one of the greatest triumphs of aseptic surgery.

Secondly.—The results of the attempt at radical cure are almost equally surprising. I have found it quite impossible to trace the subsequent history of every patient, but recent investigation shows that of those of whose histories I have a knowledge fully 90 per cent. are permanently cured, and in no instance do I advise the subsequent wearing of a truss. The essentials of my operation are briefly as follows:

The hernial sac is opened, its contents restored to the abdomen, or removed, and it is freely dissected to its very base within the ring. The sac is then drawn down, sewed across with an even continuous double suture, resected and removed. The peritoneum is then carried quite within the ring. (Fig. 1.) In large direct inguinal hernia it is important to restore the obliquity of the canal, nature's wise provision for maintaining the closure of the canal by intra-abdominal pressure in health.

This is effected by commencing at the lower and inner border of the ring, the cord having been gently laid to one side, and closing by double suturing quite to the inner opening of the ring upon the cord, which is now replaced, and the external pillars of the ring are closed by similar suture downward and inward to the pubic tubercle. The inguinal rings are thus reformed and the canal is restored to its normal oblique position. (Fig. 2.) If the tissues are sufficiently thick to warrant it, a further layer of animal suturing completes the closure, and the skin is neatly and accurately approximated by a blind running

¹ A Treatise on Hernia. The Radical Cure by the Use of the Buried Antiseptic Animal Suture." 1889. G. S. Davis, Detroit, Mich.

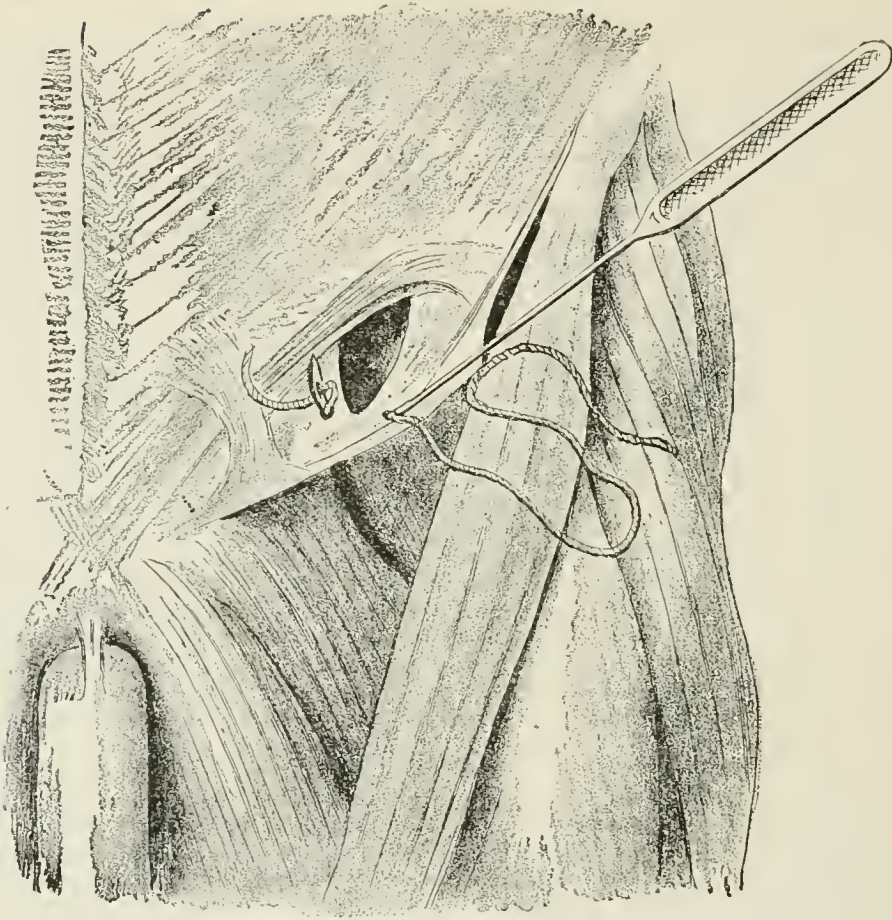


FIGURE I.—Represents the introduction of the first stitch, taken to close the ring from below upwards in order to restore the obliquity of the canal.

stitch, perhaps best applied with a fine Hagerdorn needle, taken through from side to side, including only the deeper layer of the skin. This completes the closure of the wound, each step of which is done under irrigation with a weak sublimate solution, and without the vestige of a stitch in sight. The incision is now dried, dusted with iodoform and covered with iodoform collodion, into which a few fibres of cotton are incorporated. No further dressing is necessary.

Femoral hernia is treated essentially in the same manner. Here it is necessary, after the removal of the sac, to close the ring. Protect the femoral vessels in their sheath by pressing them gently outwards, and introduce the needle, as directed in inguinal hernia, from below, through the falciform process, the fascia lata, avoiding the internal saphenous vein, upwards through Poupart's ligament, withdrawing the opposite end of the suture with the needle. (Fig. 3.) A second stitch is taken through the same tissue, parallel to the first, about one-fourth of an inch nearer the median line. The third stitch is introduced through the *pubic* portion of the fascia lata, paral-

lel to the saphenous vein, and is carried upwards to include Gimbernat's ligament, or its divided fibres if cut in strangulation. (Fig. 4.) A fourth, and as many more stitches as may be required to close the saphenous opening, is carried below and parallel to Poupart's ligament, through the pubic fascia and falciform fascia. In this way the peritoneal pouch is obliterated and the neck of the sac firmly closed.

The folding over of the fascia carries the saphenous opening quite a little to the inner side of its former site, while the femoral vessels are undisturbed in their sheath. (Fig. 5.) The superficial tissue and skin are closely held in conjunction by buried continuous animal sutures and the wound dressed with iodoform collodion, as advised in inguinal hernia.

If the cure of hernia is to be attempted under modern surgical methods, most surgeons will readily admit that it should be by a free dissection, or the open wound method, under rigid antiseptic precautions. Modern operators are divided in opinion as to the treatment of the sac. All are determined that it must in some way be

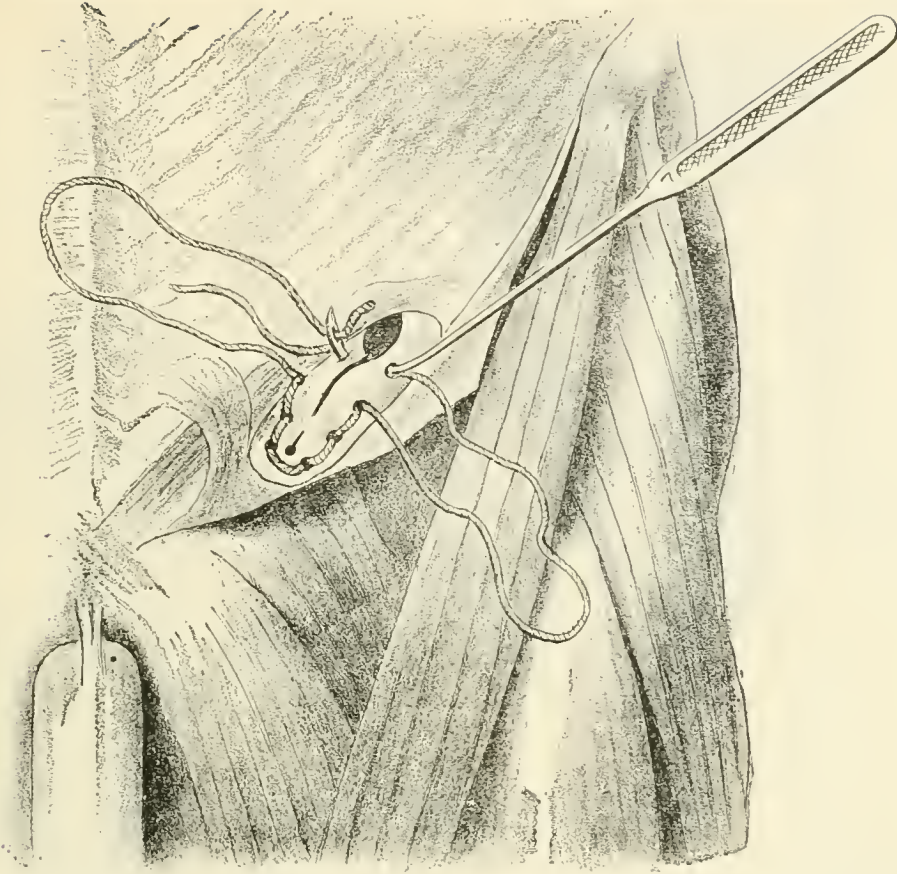


FIGURE 11.—The internal ring closed. The completion of the last deep stitch of the double continuous suture.

disposed of. Most advise ligation at its base and removal. Mr. Ball, of Liverpool, and his followers, twist it firmly upon itself, in order to render tense the peritoneum of the abdominal wall before ligation. Mr. MacEwen, on the contrary, whose brilliant results challenge admiration, advises the careful dissection of the sac, folding it back upon itself by a running catgut suture and then, with a needle with eye near the point carried through the peritoneum above the internal ring, the whole sac, puckered into folds, is drawn within to serve, as he thinks, as a buttress for the further protection of the internal ring. The advantages of this method are probably theoretic rather than real. The use of the sac as a plug to close the ring, there sutured and retained, has very generally been abandoned as unsatisfactory. Utilized as proposed by Mr. MacEwen, if it forms a buttress, as supposed, to receive the intestinal impulse, may it not be equally inferred that it would be likely to act as a wedge to press unevenly against the newly formed tissues of the restored canal, and thereby cause harm rather than serve as a deflector of pressure? Although the peritoneum forms a pouch or pocket surrounding the hernial contents, nature did not intend it to

serve as a part of the supporting abdominal wall, but by an even elastic, smooth surface lining the firm muscular and tendinous structures to allow the abdominal contents to glide easily and evenly in every direction. As will be seen by the specimens exhibited, in a very considerable number of cases of old hernia, the disposition of the sac, as advised by Mr. MacEwen, would be quite impossible. In illustration in Case 10, where the sac is nearly the size of a child's head at birth. Again, also, the sac is so intimately blended with the surrounding tissues that, with all due care in dissection, it is so devitalized and injured that, even if aseptically restored within the internal ring, its presence could furnish only a doubtful factor toward the subsequent repair of the parts. On the other hand, not seldom, especially in children, the sac is so thin and unimportant that it may often be comparatively immaterial in what way it is treated.

Normally the internal ring is ovate, and in closing the sac at its mouth it is doubtless better to do this in the direction of its longer diameter, which gives as the resultant a smooth rather than a puckered peritoneum, in the largest degree vitalized and resilient, freely movable upon its exteri-

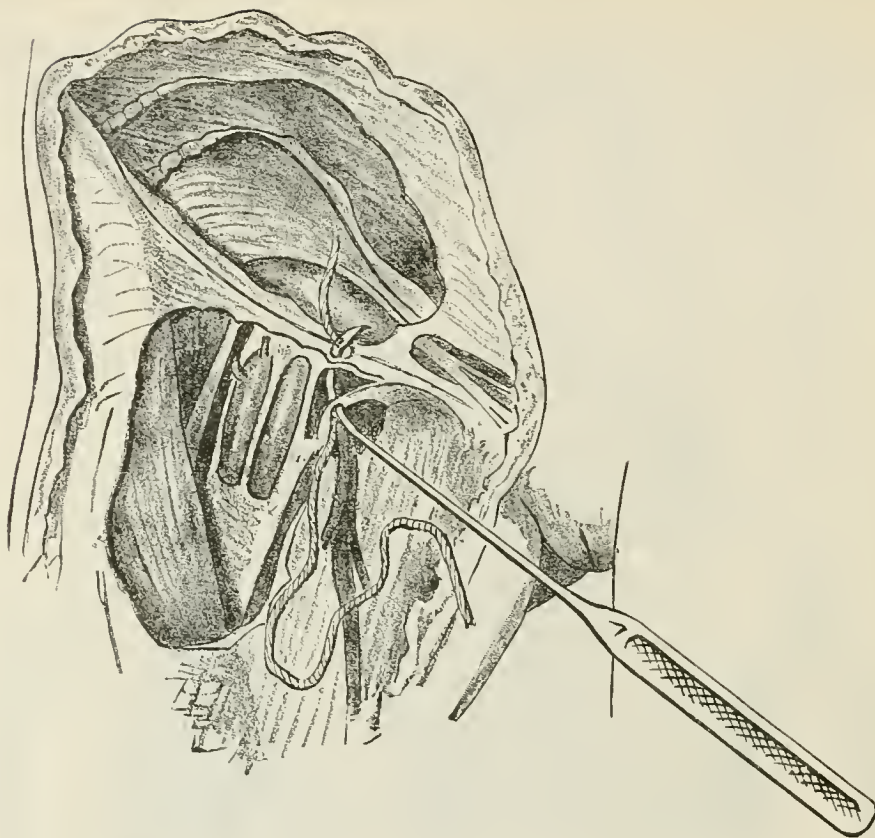


FIGURE III.—Femoral hernia. The first stitch taken parallel to the vein for closing the crural ring.

only loosely attached fascia. In the attempt at this normal restoration no method, theoretical at least, is equal to that of closing the mouth of the sac in continuous seam. Good results, however, follow all the various ways for the obliteration of the mouth of the sac at the internal ring. The method of sewing may be in considerable variety. The simple over and over stitch will give good results. I cannot doubt, however, that the closure of the canal and abdominal wall by my method of suturing with double stitch has certain marked advantages. It is equally simple in application and carries a double thread, like the shoemaker's stitch, from opposite directions, through the same opening. The approximation of the tissues thereby is even and uniform, and necessarily nothing can escape its grasp. The continuity of stitch renders equal pressure, an important gain over the interrupted suture, while a single knot only is required. It is necessary to use a needle with the eye near the point, which must also be in considerable curve. To avoid unnecessary multiplicity of instruments, I have had the larger size of Hagedorn needle drilled with eye near the point, which serves a very good purpose. It is, however, more convenient to have the needle set in a firm handle as here exhibited, and I have found a certain ad-

vantage in continuing each end of the eye in a narrow slot in order to catch and hold the thread from slipping. (Fig. 6.) Well prepared catgut may be safely used in this operation, however, I cannot doubt that the tendon suture, especially that prepared from the tail of the kangaroo, is in every way greatly superior.

When to operate is a subject of the greatest interest, but the limit of this paper must necessarily debar its discussion. Judged from my own experience, the operation is permissible in the very large proportion of all the sufferers from hernia. There is much to be said in favor of operation upon children. Certainly in adults all hernia imperfectly controlled by a truss should be carefully considered from the view of the advisability of operation. In the old large hernia, irreducible in great measure, rendering the sufferer incapacitated for all active pursuits, the operation should be advised.

Adherent omentum is likely to be so much changed as to render its return to the abdominal cavity ill-advised, but the removal of it appears to add little to the danger of the operation. Age *per se* should not debar operation. I have myself operated upon one child of 16 months who, after recovery from ether, gave little evidence of any discomfort. Several of my patients.

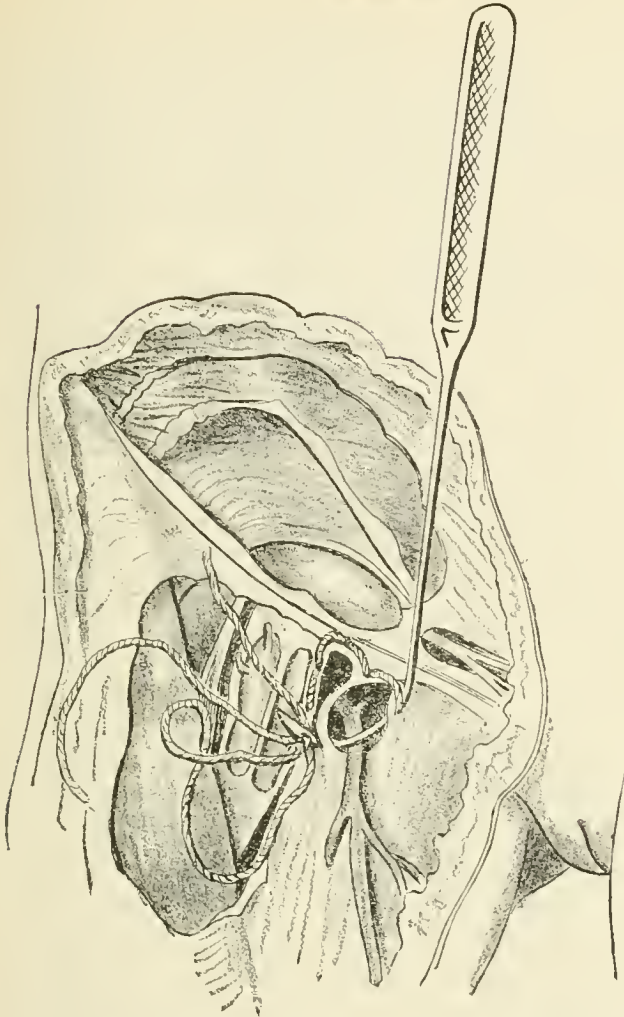


FIGURE IV.—Femoral hernia, showing a third stitch taken for closing of the canal by the use of the double continuous tendon suture. The stitches are represented as loosely drawn in order to show the method of suturing. The needle is passed through the firm pubic fascia and the outer border of the saphenous opening, and when drawn closely will fold the latter inwards.

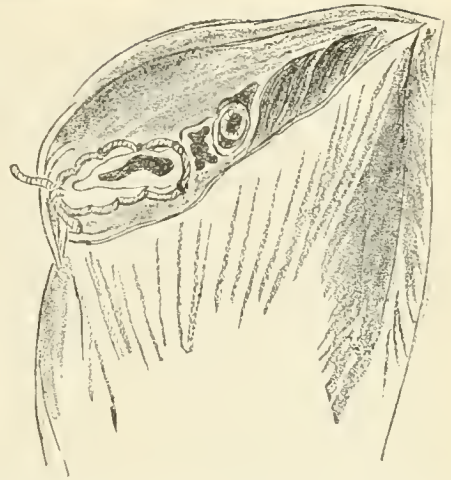


FIGURE V.—Shows the internal ring closed by the double continuous tendon suture. Stitches loose to show method of suturing.



FIGURE VI.—Needle used in the application of the deep double continuous suture.

have been past 70. My friend Dr. L. S. Pilcher, of Brooklyn, has twice operated, followed with complete cure, upon patients, each over 80 years of age. Dr. John H. Mackie, of New Bedford, writes me: "I operated on a man aged 83, right inguinal hernia, strangulated; recovery perfect, but one year later I operated on the same man for left strangulated hernia and he made a good recovery, living several years."

The advisability of operation in any given patient is always to be seriously considered as an independent problem, the factorage of which must consist of many individual details. There is little question that the large percentage of sufferers from hernia will profit from the surgery of the near

future whom the conservative surgeon of to-day conscientiously relegates to the truss bearing army of invalids.

DR. T. H. MANLEY, of New York City: With reference to Dr. Marcy's paper there are a few points on which I wish to make a few comments. They are briefly, first, that the method described and practiced by him is no open method at all, and has no claim to any such designation. The next is, that though Dr. Marcy has fair results, there has been no mention of the operation of Dr. Chas. McBurney, of New York, which is the *only, real* open method applied in the operations of hernia. By this method McBurney has now operated

more than forty times, with only one death—which had no connection in any way with the operative procedures—and with only one return of hernia. McBurney, instead of endeavoring to secure immediate union, purposely prevents it, and always *aims at* healing the furrow from the bottom, by keeping the wound margins separated till the granulation and cicatrization of tissue has progressed towards the periphery of the wound.

With reference to suture material, while I find catgut useful when primary union is sought for, where there is any tension put on the suture or where there are large blood-vessels to close, it should not be used, owing to its tendency to either disintegrate, or strip away.

The ideal, the simplest and, *every way* considered the safest method, I think, yet known for operating in cases of strangulated hernia, is McBurney's. Here, every time, we can promise *permanent* cure, if the patient survive operation. But he must be operated on early. General practitioners, when they encounter hernia resisting taxis, and threatening to become constricted, should advise *immediate* operation provided the patient's general health is good. He can effect a radical and speedy cure here, which in itself entails no danger to life. I have applied the McBurney method in strangulated cases. I have operated during the past spring three times for strangulated hernia by the open method; two recovering and one dying, who was practically moribund when he went under ether.

Both surviving, with their hernias permanently closed, and being confined to bed only twenty-eight days in each instance.

DR. J. O. WHITNEY, of Pawtucket, R. I., said there is no such thing as congenital hernia. It is due to straining from crying, or at urination with adherent prepuce. If the prepuce be split up no trusses are necessary.

DR. H. D. DIDAMA, of Syracuse, N. Y., had been present at several of Dr. Marcy's operations. The performance was as described by him. The stitching was so complete that a return of the hernia was impossible unless the tendon should be absorbed too soon and give way. But his experience has proved to him and should satisfy us that this tendon never gives way, and that we need not lie awake fearing any bad result from this source. He uses no drainage whatever and never needs any. He never removes a suture because none ever appears on the surface of the skin. There are never any stitch abscesses which are so common in laparotomies performed by sewing through the entire thickness of the abdominal walls.

Dr. Marcy's operation does not confine the patient to the bed for a long time, sometimes not more than two or three days, and there is no pain in any considerable number of cases, and not even inconvenience. His operation seems simplicity

simplified and a temptation to any one who has a hernia, even if it gives him no trouble.

DR. JOSEPH H. WARREN, of Boston, Mass., said: While I endorse in general the operation of suturing advocated by Dr. Marcy, I have certain points of technique in my own method essentially differing from his method which I will mention.

I am aware of the claims advanced for animal sutures, but I have always feared their advantages might be too great and the absorption claimed for them might be premature. I have used those furnished by Dr. Marcy himself first in a case of ovariectomy, and I passed sleepless and anxious days and nights in consequence. The constant dread of the melting away of the ligatures, although perhaps not probable, was sufficiently possible to give me no rest until the patient was beyond doubt cured. The case was especially dangerous, as acute mania set in and the patient persisted in tossing and kicking about, to the total destruction of a mechanical bed which I used for such cases and with imminent danger of destroying herself. Still, the ligature held, and I presume this would be construed as a success by one in favor of animal ligatures. Still the uncertainty remains.

Another objection to the animal ligature is the large size compared to silk of the same strength, and the consequent large needle necessary for its use. In my own operations I use braided silk, and feel secure when the parts are approximated they will stay so until united.

The essential difference in my method is the style of lacing. The sac and omentum are included in a gathered suture, the silk being run in from both sides like the puckering string of a bag. Redundant tissue is cut off with scissors just below the stitch. The mass is then returned, the two ends of the suture being left outside and the mass drawn down by them to the internal surface of the ring. A series of stitches is taken in the edges of the ring, each suture being interrupted, all passing each other at the centre, forming a multiple cross or star-shaped plan. This is the first stage. After this I insert a series of stitches superimposed upon the first, each stitch being taken some distance back from the edge of the ring, the stitch not passing entirely through the muscular walls but entering the surface, passing backward and coming out beyond the point of entrance about $\frac{1}{4}$ inch. These stitches are tied sufficiently tight to pucker the tissues and infold the muscular tissue at the site of the ring. This results in a raised cicatrix, the elevation pointing toward the abdominal cavity and rendering a recurrence of the hernia at that spot less likely, whereas in the plain lacing of the tissue a depressed scar results which offers a constant *point d'appui* for the intestines to work against, and sooner or later may allow the entrance of the wedge and consequently rupture.

This reduplication of tissue also gives a larger uniting surface, the edges and contiguous surfaces being freshened that adhesion may more readily take place. This freshening is most completely done with scissors or scraping rather than with a sharp scalpel, it being my experience in special and general surgery that torn or roughly dressed tissues heal more readily than those cut with sharp, keen scalpels. My preference for the fingers or tearing instruments in place of sharp instruments is founded on good results obtained by this method, and this is especially the case in the cutting of arteries and veins. When put on the stretch and thus severed the vessel is closed so effectually that in my own practice I have never had a case of secondary hæmorrhage, and the primary loss of blood is very slight.

At one time I advocated the use of the galvanocautery in securing a consolidation of the hernial rings. Several cases were successfully treated by this method, and should a very large hernia with weak walls present itself I think I should still prefer this method. The adhesive and contractile power of a burn is well known, and it is as powerful in the hernial rings as elsewhere.

In ordinary cases the freshening and lacing is sufficient. In the majority of cases I still adhere to the subcutaneous injection, and in selected cases, those of good physique and where the hernia is small and of recent occurrence, I still have good results, a ratio of 96 per cent. Its failure in the hands of some operators is not due to the operation. It is due to the selection of cases in the first place that ought never to have been attempted; and secondly it is due to non-observance of minor matters of technique. While I have given its description in the plainest manner possible, I am convinced that there are elements of technique which can be caught only by intuition or careful clinical instruction. The fact that it is practiced by advertising specialists with advantage to the patient and pecuniarily to themselves, and that they claim to have license from me (a claim not founded on fact), proves that there is some good in it.

My name has unfortunately become so firmly united with the operation by injection that many think I advocate no other method and practice no other part of the profession. This is untrue in both cases. My motto is to choose the best for the case in hand, and I would not for a moment be prejudiced in favor of any pet method to the prejudice of the case. The case in all its details determines my method of procedure.

DR. H. J. HERRICK, of Cleveland, O., said: I have taken much interest in the papers presented looking to the relief of this distressing and frequent danger to which so many are subject. Most of the cases reported are of those which have come under the care of the surgeon when the emergency was upon them. In this connection I

desire to call attention to that large class of cases in which the hernial tumor is so large and the opening so patent that strangulation is not and is not liable to be present, but, on account of the size and inconvenience as well as danger of inflammation, life becomes intolerable except as it may be devoted to nursing this as yet almost hopeless infirmity.

Have we not a duty towards this class of sufferers? In illustration of the points indicated I will mention the following cases: A young man 28 years of age came to me from a neighboring city with a double scrotal hernia each side of which was the size of the two fists, the openings so great that the gut could not be retained with any appliance. Patient was anxious for matrimony and the business of life, yet with the existing deformity could not. I advised an operation for the radical cure. Not being satisfied with any of the concealed, obscure and empirical means that had been devised, I proposed an open radical operation, which I made upon both sides at the same operation. With antiseptic precautions I made an incision along the neck of the sac 3 inches in length, dissected my way to the sac, emptied it of its contents, at the same time drawing it out. Holding the empty pouch I applied a temporized clamp made by the handle of a dressing forceps closely to the neck, then amputated the sac near the clamp, leaving space for the closing of the neck with a continuous suture, with care to bring the edges of the amputated sac in apposition. The ligature used was the iron dyed silk. Thus the peritoneal cavity was kept closed from the entrance of air, fluid or any septic material. The edges of the ring were made bare and brought together with an interrupted suture of the same material. In the same way I brought together the divided parts of the deep fascia, also superficial fascia and connective tissue and finally the integument, taking special care to leave no contused or lacerated fibres, remove all clots and bring together gently in apposition all the divided parts. No drainage tube was used. Antiseptic dressing was made. The case proceeded to recovery with no unfavorable symptoms, temperature having reached only 100°. In two weeks' time the wounds were entirely healed, with no suppuration. After three weeks, patient returned to his home, since which time he has pursued his former plans of matrimony and business with no return of the hernia. About two months ago a woman with an inguinal hernia of the left side came to me. The tumor was the size of the two fists and involved the left labia, which was very greatly distended and tumefied. It could not be retained by truss, and being required to gain her living by work she expressed the feeling that she would rather die than endure the suffering and care necessary. I advised the open operation for radical cure, to which she con-

sented. The operation was performed two months later in substantially the same manner as in the previous case. The large pouch of the labia was treated antiseptically with a bichloride solution, with the expectation that no suppuration would occur. Owing to its size, tumefaction and inelastic structure suppuration followed and came near destroying the hopes in the case. The inflammation did not extend to the line of deep incision, but was limited to the pouch of the labia, which being opened freely, cleansed and washed with sol. carbolic acid, inflammation subsided and all dangerous symptoms subsided, so that patient before I left home was up, parts perfectly healed, and discharged from the hospital apparently well. It is too early at present to speak assuredly of the absolute success of the operation, though all appearances at present justify the fullest hopes.

I used in this last operation the clamp used for the treatment of hæmorrhoids and found it a most appropriate instrument. By reason of the handle it enabled the assistant to hold the part in the most convenient way for suturing, and the thumb screw enables the surgeon to regulate the pressure to be applied so cautiously as not to endanger the integrity of the parts.

Feeling that the profession has a new duty to perform to this class of unfortunates, these cases in this connection may not be amiss.

DR. MARCY, in closing the discussion, said that the large number present at this late hour (nearly midnight) shows the interest which American surgeons have in the subject under debate. He would detain the members but a few moments, although many points of both interest and profit had been alluded to only briefly. He would ask a critical examination of the specimens of the peritoneal sac which he had been to the trouble of bringing, since they showed important pathological changes which appeared recently to have been, in a large measure, overlooked. They are of the first importance to understand if we are to utilize the sac by any method of surgical procedure. Cloquet, in his masterly work, emphasized the great changes which the sac in old herniæ usually presented. Dr. Manley evidently entirely misunderstood the use Dr. Marcy made of the words open wound. This was in contradistinction to subcutaneous methods of treatment, as by the yet too generally accepted plan of Dr. Wood of subcutaneous closure by the wire suture, or the methods of cure by injection. He was quite familiar with Dr. McBurney's operation, and had only recently carefully reviewed his method, showing what he thought were primal faults. Elsewhere, in all parts of the body, the aim of modern surgeons was to secure primary union, and it would indeed be strange if a hernial wound should prove an exception. Why not adopt this plan in the closure of all laparotomies, if so greatly to be preferred. Dr. McBurney's

method has found advocates chiefly because the hernial wounds, as ordinarily dressed, are very liable to become infected. Dr. Warren has referred to the large size of the animal suture, as compared with silk, which is necessary to be used. This, in a measure, is true if catgut is used, but does not apply to tendon. On the contrary, the tendon suture, the size of silk, is very much stronger, as may be tested by the samples here shown. Dr. Pancoast has just made an eloquent plea for the use of his iron-dyed silk. However he, with most others, admits that it generally must be removed. At the best, silk is encapsuled, while the aseptic animal suture is replaced by bonds of living connective tissue cells. Upon this fact, long since demonstrated, is based, in a large measure, the method here advocated, and it is not too much to believe that the profession will early accept the great gain resulting from the use of the aseptic animal suture in the coaptation of all aseptic operative wounds.

Blind surgery is bad surgery. As advocated, each step of the operation is directed by seeing the exact condition of the parts. The reformed peritoneum is carried within the firm tissues of the abdominal wall. The inguinal canal is reformed. The refreshed pillars of the ring are closed in even continuous suture. The coapted skin is covered by a layer of germ-proof iodoform collodion. The wound, if aseptic, remains so, and Dr. Warren may rest undisturbed by dreams or visions of discontent, while the patient in security goes on to rapid convalescence.

A PLEA IN FAVOR OF EARLY LAPAROTOMY FOR CATARRHAL AND ULCERATIVE APPENDICITIS, WITH THE REPORT OF TWO CASES.

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The literature of the surgical treatment of affections in the ileo-cæcal region has been increasing very rapidly during the last few years. A great deal has been said and written concerning the propriety of surgical interference in cases of perforative appendicitis, typhlitis, paratyphlitis and perityphlitis. Post-mortem examination and clinical experience have demonstrated that with few exceptions localized and diffuse peritonitis as well as suppurative inflammation of the connective tissue originating in the ileo-cæcal region, are caused by an antecedent affection of the appendix vermiformis, which has resulted in perforation or gangrene of that structure. While it cannot be said that unanimity of opinion exists among surgeons in reference to the exact indications for

operative treatment in cases of appendicitis and suppurative perityphlitis, it is safe to assert that the majority of them would not hesitate to resort to the knife in every instance where it would be possible to ascertain beyond a doubt that perforation had taken place. Numerous cases have been reported during the last three years where prompt action on part of the surgeon has been the means of saving life in cases of phlegmonous inflammation and circumscribed peritonitis caused by perforation of the appendix vermiformis; but, on the other hand, many laparotomies for diffuse peritonitis due to the same cause proved powerless as a life-saving measure, because the direct invasion of the peritoneal cavity had given rise to a diffuse septic peritonitis alike beyond the reach of medicinal and surgical measures. The principal object in writing this paper is to call the attention of the profession to the necessity of treating the primary disease of the appendix by radical measures before the advent of incurable complications, that is, before disease due to perforation has occurred. I believe that in many cases the development of perityphlitis is preceded by a well-marked complexus of symptoms pointing directly to the existence of appendicitis. Many patients suffer from well-defined symptoms indicative of the presence of an inflammatory lesion of the appendix for months and years before it gives rise to a perityphlitis or perforative peritonitis. It is of the greatest practical moment to recognize the exact condition in time, and to anticipate the dangerous and only too often absolutely fatal complications by removing permanently the source of danger which can be done at this time with comparative ease and almost perfect safety by the extirpation of the appendix.

The following cases will serve to illustrate the correctness of these assertions:

Case 1.—J. S., 22 years of age, clerk by occupation, came under my observation during the last week in April, 1889. He consulted me at my office, and informed me that during the last fifteen months he had suffered from five attacks of what his physician called perityphlitis. Each attack was attended by excruciating pain in the ileo-cæcal region, vomiting and constipation, and usually lasted from one week to twelve days. During the intervals he was able to follow his occupation, but never quite regained his former health. The treatment consisted of rest in bed and opiates. Between the attacks the bowels moved regularly, and the patient was free from pain. At the first examination I found the temperature 99.2° F., pulse 80, tongue heavily coated. Patient somewhat emaciated and pale. Pain was referred to the ileo-cæcal region, and directly over the location of the appendix vermiformis a circumscribed area of tenderness could be mapped out. Palpation and percussion failed

to show any appreciable swelling, but on deep pressure while the patient's chest was elevated and thighs flexed, a firm cord-like body could be felt behind the cæcum over a point corresponding to the location of the appendix vermiformis. No tympanites or any other symptoms of peritonitis were present. I was satisfied of the existence of appendicitis from the history of the case and the symptoms and signs presented, and feared that during this or subsequent attacks perforation with all its uncertain consequences might take place. In view of the probability of such an occurrence, I advised a radical operation as the only means calculated to afford permanent relief. The patient had suffered so severely during the five preceding attacks that he readily consented to the proposed operation. During this attack he was confined to bed only at times, and took opiates as required for the pain. As the symptoms did not subside he was admitted into the Milwaukee Hospital April 30, for the purpose of having the appendix removed. A saline cathartic was administered the day before operation, and the following morning the colon was evacuated by a copious enema. The evening before operation the abdomen was shaved and thoroughly cleansed with warm water and potash soap, after which a compress wrung out of a sublimate solution 1:2000 was applied.

Operation May 1: Chloroform anæsthesia. After removal of the compress the surface was washed with undiluted alcohol. An incision about four inches in length was made directly over the center of the cæcum and parallel to the ascending colon, the lower angle of which reached to within an inch of Poupart's ligament. All hæmorrhage was carefully arrested before the abdominal cavity was opened. The peritoneum was divided between two anatomical forceps, when two fingers of the left hand were introduced and between them the opening was enlarged. Through this incision the cæcum came directly in view and presented a normal appearance both as to size and structure. No evidences of peritonitis or perityphlitis. On making pressure over the lower portion of the cæcum an elongated body about the thickness of an ordinary lead pencil could be distinctly felt rolling under the tip of the finger. The lower margin of the cæcum was grasped with the fingers, elevated, and brought into the wound. This manipulation brought into view the appendix which was directed upwards and inwards from its point of attachment, along the posterior wall of the cæcum. No adhesions between the appendix and the cæcum, but the mesentery of the appendix appeared to be shortened and exceedingly vascular. The peritoneal covering of the appendix appeared healthy, having retained its normal smoothness and lustre. The appendix was uniformly enlarged from its junction with

the cæcum to its distal extremity, and imparted a sensation of unusual hardness when grasped between the thumb and index finger. The mesentery of the appendix was ligated in several sections with fine silk and cut close to the appendix. The appendix was ligated near the cæcum with a silk ligature and amputated about a quarter of an inch below the point of ligation. The lumen of the appendix at the point of section was quite small, but as it was more than probable that it communicated with the cæcum, I deemed it necessary to prevent the possibility of a subsequent perforation from cutting through of the ligature by covering the stump with peritoneum. The stump was disinfected, dusted with iodoform, and buried by stitching the peritoneum from each side over it by a number of stitches of the continued suture. The cæcum was now returned and the wound closed by suturing the peritoneum with catgut, while the external sutures of silk were passed down to, but not through, the peritoneum. A compress of iodoform gauze and a thick layer of salicylated cotton retained by a number of strips of adhesive plaster encircling two-thirds of the body constituted the dressing. The subsequent history of the case was one of uninterrupted recovery. The pain disappeared as if by magic. The patient took no opiates after the operation. Temperature never above normal. On the third day the bowels were moved by a saline cathartic after which no further medication was necessary. At the end of a week the dressing was removed when the wound was found united throughout and the sutures were removed. At the end of the second week the patient left the hospital, and in the course of another week resumed his occupation. He is now in perfect health, has gained in flesh, and has been perfectly free from pain. The amputated appendix proved to be a very interesting pathological specimen. The part removed measured two inches in length, and in thickness corresponded in size to the last joint of the little finger. The lumen was uniform in size throughout and was large enough to admit a small-sized lead pencil. The appendix was slit open its whole length at a point opposite to the mesenteric attachment. On inspection of the mucous membrane lining it an oblong ulcer was discovered near the middle and opposite the mesenteric attachment. The ulcer measured about half an inch in length, and a quarter of an inch in width, its greater diameter corresponding to the long axis of the appendix. The margins of the ulcer were regular in outline and not undermined. It presented no evidences of repair. Its greatest depth corresponded to its centre. The whole mucous membrane was exceedingly vascular and much thickened, the submucous infiltration being uniform over its entire area. A transverse section of the appendix through the centre of the

ulcer, examined under the microscope, showed that the entire thickness of the mucous membrane and part of the muscular coat were destroyed by the ulcerative process, and that the remaining thickness of the wall as far as the peritoneum was infiltrated with embryonal cells and leucocytes which were closely grouped together in the connective tissue reticulum. The submucous tissue and part of the muscular coat were similarly infiltrated throughout. No fecal matter and no foreign body could be found in the lumen of the appendix, the whole contents consisted of a few drops of a highly viscid odorless secretion. The absence of any macroscopical cause of the inflammation, the condition of the mucous membrane, and the appearance of the ulcer substantiate the diagnosis of catarrhal appendicitis, which in this case had resulted in the formation of a catarrhal ulcer of considerable size and depth. There can be but little doubt that repeated acute exacerbations of the chronic inflammation would have finally resulted in perforation, and as the ulcer was located on the free side of the appendix there would have been great danger in such an event of invasion of the peritoneal cavity, and death from diffuse septic peritonitis. The second case came under the observation of Dr. Knut Hoegh, of Minneapolis, Minn., and through his courtesy I am permitted to incorporate it in this paper. It furnishes an illustration of another form of appendicitis (suppurative) amenable to early successful surgical treatment.

Case 2.—H. M., 37 years of age, merchant by occupation. For the last six or seven years he has suffered at intervals from attacks of pain in the abdomen. At first these attacks were not very severe, and of short duration, the general health remaining unimpaired. Questioned as to the condition of the bowels the patient stated that the attacks were usually attended by diarrhoea. The onset of pain was always sudden and apparently without any appreciable cause, as they often occurred during the night after the patient had retired the evening before in perfect health. In the beginning the attacks occurred about every six months, but later they came on more frequently, more severe, and of longer duration, and at the same time the general health became impaired. The later attacks he describes as commencing with a severe pain in the ileo-cæcal region which at times became excruciating, accompanied by sensations of chilliness. No vomiting, but more or less retching; bowels constipated; abdomen often distended and always tender on pressure over a limited space, at a point from which the pain always seemed to start.

Patient is not aware that he ever passed blood, mucus or pus with the stools. During the last fifteen months he has passed through five attacks,

the last one two months before the operation was performed. Since the last attack he has been unable to resume his business as he has suffered constantly from pain and tenderness in the ileo-cæcal region, loss of appetite, and an increasing debility. The patient looks prematurely old, showing evidences of senile marasmus seldom found in persons of his age. He is of medium height, somewhat emaciated, having lost twenty-five pounds of his customary weight. Examination of the abdomen revealed no tympanites and no swelling, but midway between umbilicus and the right anterior superior spine of the ilium a space about two inches square was found tender on pressure. Rectal exploration yielded a negative result. The usual internal treatment in such cases consisting of the administration of belladonna, nux vomica, and alkaline cathartics was not followed by any material improvement, so that the patient readily consented to an operation which had for its object the removal of the appendix vermiformis which it was believed was in a condition of catarrhal inflammation. The absence of swelling and fever seemed to render it improbable that the symptoms were due to circumscribed peritonitis, or inflammation in the cæcal mesentery or para-cæcal connective tissue. The repeated attacks of pain, the localized tenderness, and the digestive disturbances pointed to a localized inflammation depending upon some chronic pathological change within or near the appendix vermiformis. Dr. Foster, of Minneapolis, saw the case in consultation with Dr. Hoegh, and concurred in the opinion that an operation should be performed. The writer was consulted by letter, and strongly urged the propriety of a speedy resort to surgical treatment. The operation was performed by Dr. Hoegh in the St. Barnabas Hospital, August 19, 1889, assisted by Drs. Foster and Wood. Chloroform was used as an anæsthetic. Operation performed under strict antiseptic precautions. Incision through right linea semilunaris. On opening the peritoneal cavity the appendix came at once in sight lying free in the peritoneal cavity, pointing towards the pelvis. It was about two inches in length, remarkably firm to the touch, and its serous surface quite vascular. At some points it had formed adhesions with the surrounding structures. The adhesions were separated and a ligature applied near its junction with the cæcum. The stump was buried in the same manner as in case 1. The cæcum showed nothing abnormal. It was noticed that the point of communication between the appendix and cæcum was very narrow, the lumen not exceeding the size of a knitting needle. The abdominal incision was closed in the usual manner. Soon after the operation the patient suffered considerably from nausea and retching which gave rise to considerable pain in the wound. A slight elevation in the tem-

perature a few days after the operation announced a slight suppuration in the superficial portion of the wound, which, however, soon subsided, and the healing by granulation proceeded in a satisfactory manner. Aside from this disturbance the patient went on to an uninterrupted and permanent recovery. Examination of the appendix after its removal showed that it was somewhat distended in its central part by a few drops of a thick, very offensive, purulent fluid of the consistency of cream, of a brownish color; the odor was not feculent, but rather fetid. No concretion or foreign body was found. The mucous lining of the appendix showed two distinct but not very deep ulcers, both involved the entire thickness of the mucous membrane. The ulcer nearest the cæcum was the largest occupying the whole circumference of the lumen about one-quarter of an inch wide. The second ulcer nearer the apex was not larger in circumference than the size of a split pea. The serous coat near the junction of the cæcum was considerably thickened. Microscopical examination of the fluid showed broken down tissue, pus corpuscles, and pigment granules.

GENERAL REMARKS ON EARLY RADICAL OPERATION FOR APPENDICITIS.

Excision of the appendix in cases as reported above must be considered in the light of a curative and prophylactic operation. It is curative, as by it the cause of the disease with the diseased tissues is completely removed, and it is prophylactic, as by it the disastrous consequences of a probable later perforation are positively prevented. Extirpation of the appendix at a time before the inflammatory process has reached the serous coat is one of the easiest and safest of all intra-abdominal operations. The operation is performed in a healthy aseptic peritoneal cavity, and if the customary antiseptic precautions are carried out healing of the visceral and abdominal wounds by primary intention may be confidently expected. The operation eliminates a structure which if not entirely useless has at most only an unimportant physiological importance.

INDICATIONS FOR OPERATION.

It may be stated as a general rule, to which there can be but few exceptions, that the appendix should be extirpated in all cases where from the symptoms and history of the case the existence of a localized destructive inflammatory process can be surmised. From a diagnostic and practical standpoint all cases of appendicitis can be divided into two classes: 1. Acute. 2. Chronic. There can be but little doubt that most, if not all, acute cases are preceded by a chronic lesion. The history of many cases, and the pathological conditions of numerous specimens corroborate this statement. A foreign body, for instance, may be present for a long

time without giving rise to serious symptoms, but it cannot remain for any length of time without causing a catarrhal inflammation and superficial ulceration. An ulcerative catarrhal inflammation may exist for a long time before it gives rise to acute symptoms, and when the acute attack makes its appearance the inflammation has reached the peritoneal surface and the connective tissue underlying the appendix and cæcum; it is then no longer an uncomplicated case of appendicitis as the primary inflammation has extended beyond the structures of the appendix, and has given rise to perityphlitis, with or without perforation. Chronic appendicitis is characterized by acute exacerbations of short duration, the attacks of greater or less severity occurring at intervals of a few months or weeks. Between the attacks the patient may be in perfect health, unless the attacks recur with great frequency, when impairment of the digestive functions produces general ill health. The most important symptoms which point to the existence of chronic appendicitis are localized pain and a circumscribed area of tenderness at a place corresponding to the location of the appendix. Simple appendicitis does not give rise to any appreciable swelling as long as the lumen of the appendix remains in communication with the cæcum, as the resistance of the indurated walls is sufficient to force the contents of the appendix into the cæcum. In persons with thin abdominal walls it is possible to feel the hardened and thickened appendix by making deep pressure while the patient is placed in a position that favors relaxation of the abdominal muscles. Tympanites is usually absent unless the appendicitis is complicated by circumscribed peritonitis. Rigidity of the abdominal muscles is absent as long as the inflammation is limited to the deeper structures of the appendix. During the acute exacerbations of the chronic form of the disease aside of the pain the general symptoms are not severe. The temperature is either normal or there is only a slight rise seldom above 100° F. The pulse is only slightly increased in frequency, and shows none of the characteristic features which it presents in peritonitis.

Vomiting is occasionally present, but is not a constant nor even a frequent symptom. Constipation which is usually present is probably more the result of a change in diet, rest, and the medicines taken for the relief of pain than the disease. The frequency of catarrhal and ulcerative inflammation in the interior of the appendix as compared with the remaining portion of the intestinal tract is probably owing to the anatomical location of this structure. The lumen of the appendix constitutes a cul-de-sac which is in communication with the intestinal canal, but which is virtually excluded from the faecal circulation, hence it serves an admirable purpose as a

reservoir for the collection, localization and retention of pathogenic microbes. That the anatomical location of the appendix acts as a predisposing cause in the etiology of localized forms of infection is evident from the course of the disease.

The inflammatory process remains limited and does not extend by continuity to the cæcum, the extension of the disease being only in a peripheral direction from the mucous membrane to the deeper structures. In conclusion it may be said that recurring attacks of pain in the region of the appendix with a circumscribed area of tenderness over the same point are presumptive evidences of the existence of appendicitis, and if the other symptoms and signs point in the same direction treatment by abdominal section is indicated.

TECHNIQUE OF OPERATION.

As an operation for simple appendicitis always presupposes an aseptic condition of the peritoneal cavity, it is of the utmost importance to secure by thorough antiseptic precautions an aseptic condition of everything that has to be brought in contact with the wound. The field of operation should be disinfected by shaving and thorough washing with warm water and potash soap, after which a moist compress saturated either with a 1-2000 solution of sublimate or a 2½ per cent. solution of carbolic acid is applied and allowed to remain from the time the disinfection is made the evening before the operation until the patient is ready for the operation the next day. Immediately before the incision is made, I am in the habit of washing the surface once more with one of the disinfectant solutions, and lastly with absolute alcohol. The instruments should be sterilized by boiling for ten or fifteen minutes immediately before the operation. The operator and assistants should disinfect their hands by washing thoroughly with warm water and potash soap, and subsequently a 1-1000 solution of sublimate. If everything has been rendered thoroughly aseptic, that is to be brought in contact with the wound, no antiseptic solutions will be necessary during the operation, unless perhaps for the disinfection of the stump after amputation of the appendix. Sterilized water is used for the sponges.

Incision.—The incision that renders the cæcum and appendix most accessible to inspection, examination and operative manipulation is one made parallel to the long axis of the ascending colon and cæcum. It should be about four inches in length and directly over the centre of the cæcum, and extend to within an inch of Poupart's ligament. With a sharp scalpel the skin, fascia and successive muscular layers are rapidly divided without the use of any director until the peritoneum is reached. At this stage a pause is made in the operation in order to arrest

hæmorrhage by applying hæmostatic forceps to every bleeding point, the forceps remain until the surgeon is ready to close the wound, when it will generally be found that ligatures are superfluous, as the compression and crushing of the tissues caused by the forceps have been sufficient to arrest the bleeding. By following this plan unnecessary ligation of small vessels is avoided. The peritoneum is picked up by two catch-toothed forceps, and between them the abdominal cavity is opened, and the incision subsequently enlarged to the desired extent between the index and middle finger of the left hand. As soon as the peritoneal cavity is opened the further steps of the operation will be greatly facilitated by packing around the cæcum a small compress of aseptic gauze wrung out of sterilized water for the purpose of preventing prolapse of the small intestines. If the appendix is below the cæcum it will come into sight at once, when it can be examined and directly dealt with. If, as is more frequently the case, it is behind and towards the inner side of the cæcum its size and direction can be readily ascertained by palpation through the cæcum, but to make it accessible to direct examination and operative treatment it is necessary to raise the lower margin of the cæcum.

Excision of the Appendix.—If the serous coat has not been implicated by the inflammation the only attachment to be separated is the mesentery of the appendix. This is always present, but varies greatly in length and width. If it is attached to the whole length of the appendix it should be ligated in several sections with fine silk ligatures as far as the cæcum. If inflammatory adhesions are present they are separated, and all bleeding points carefully tied. When the appendix has been thus completely isolated a ligature of fine silk is tied around its base close to the cæcum, and about a quarter of an inch below it the section is made with scissors.

Treatment of Stump.—As the interior of the appendix under such circumstances necessarily must always contain pathogenic microorganisms it is necessary to disinfect the cut surface of the stump thoroughly. This can be done with one of the disinfectant solutions, after which the stump should be dusted with iodoform. After amputating the appendix it has been heretofore customary to drop the stump without making any provision against the possibility of perforation, subsequently taking place at the point of ligation. This I consider a great mistake. The ligature approximates a diseased mucous membrane, and if after the operation the entire stump is not speedily surrounded by a wall of impermeable granulation tissue which is later transformed into a connective tissue capsule, there is great danger that perforation will take place after cutting through of the ligature, thus exposing the patient to the same danger he was in before

the operation. To obviate the possibility of such an occurrence the stump, after thorough disinfection and iodoformization should be covered with peritoneum by stitching the serous surfaces of the cæcum from both sides over it by a number of Lembert sutures. The serous surfaces will become agglutinated in a few hours, and in a few days the adhesions will have become sufficiently firm to protect the surrounding tissues and the peritoneal cavity against extravasation should leakage take place at the point of ligation. By resorting to this precaution we protect the patient against all possibility of the occurrence of perforative peritonitis subsequently, as the perforation, should it occur, of necessity would take place into the cæcum.

Closure of Abdominal Incision.—More care is required in closing an incision made through the several muscular layers of the abdominal wall than by going through the median line, as the ordinary way of closing a median incision would be very likely to be followed by a ventral hernia. The peritoneum must be sutured separately with fine catgut or silk sutures, while the remaining sutures are passed down to, but not through, the peritoneum. No provision for drainage is necessary in these cases.

Dressing of Wound.—After dusting the wound with iodoform a narrow strip of protective silk is applied over it, when it is covered with a compress of iodoform gauze and a larger compress of salicylated cotton which are retained with a few broad strips of rubber adhesive plaster encircling two-thirds of the body. After this the whole abdomen is enveloped with a thick layer of common cotton over which a well-fitting binder is snugly pinned; this not only gives additional support to the wound, but furnishes likewise an agreeable and efficient support to the abdominal wall.

After Treatment.—As it is advisable to move the bowels the day before the operation by a saline cathartic, and to empty the colon by enema the following morning, the bowels should not be disturbed again for several days after the operation. This can be accomplished by administering several ten-drop doses of deodorized tincture of opium, and placing the patient on absolute diet for at least two or three days. On the third day a saline cathartic is administered, and, if necessary, this is followed by an enema. The sutures are removed at the end of the first week, but the patient is not allowed to leave the bed for another week for fear that the adhesions might yield and a hernia might follow. For several weeks after this he should wear some kind of an efficient abdominal support to guard still longer against the same accidents.

CONCLUSIONS.

1. All cases of catarrhal and ulcerative ap

pendicitis should be treated by laparotomy and excision of the appendix as soon as the lesion can be recognized.

2. Excision of the appendix in cases of simple uncomplicated appendicitis is one of the easiest and safest of all intra-abdominal operations.

3. Excision of the appendix in cases of appendicitis before perforation has occurred is both a curative and prophylactic measure.

4. The most constant and reliable symptom indicating the existence of appendicitis are recurring pains and circumscribed tenderness in the region of the appendix.

5. All operations on the appendix should be done through a straight incision parallel to and directly over the cæcum.

6. The stump after excision of the appendix should be carefully disinfected, iodoformized, and covered with peritoneum by suturing the serous surface of the cæcum on each side over it with a number of Lembert stitches.

7. The abdominal incision should be closed by two rows of sutures, the first embracing the peritoneum, and the second the remaining structures of the margins of the wound.

8. Drainage in such cases is unnecessary and should be dispensed with.

MEDICAL PROGRESS.

HYDATID CYST OF THE LIVER. RUPTURE—RECOVERY.—DR. H. C. MARKHAM, of Independence, Iowa (*North American Practitioner*, October, 1889) reports a case of this description. The cyst was first discovered three years ago. Under rest and alterative treatment amelioration of the symptoms apparently took place. In December last the patient's condition became much worse. The tumor, which appeared at the inferior border of the lower ribs, anteriorly, was now tense and as large as a pint bowl. A diagnosis of hydatid cyst was ventured at this time. A specimen of the cystic contents was obtained with a hypodermic needle, a subsequent examination of which confirmed the diagnosis. Upon the withdrawal of the needle the patient experienced excruciating pain and gave signs of collapse; the tumor meanwhile had disappeared, having evidently ruptured. The cyst refilled and soon reached the size of a foetal head at term. It was aspirated and 3 pints of turbid serum removed, after which a strong solution of iodine was injected and allowed to remain for some time. An apparent cure was thus effected. At present deep palpation detects the hardened residue of the sac.

GALACTOCETE TESTIS.—A case is reported from the clinic of DR. A. B. MILES, New Orleans,

which, for want of a better term, is indicated by this title. The testicle had been swelling for three months at the time of the examination. With the hypodermic needle a small quantity of a milky-looking fluid was drawn off. Examined in the pathological department of the Charity Hospital it was found to contain numerous fine granules in a state of active movement. No bacteria were present. Five hours later the testicle was found to be greatly diminished in size and within twenty-four hours the patient was discharged apparently cured. Five days later there was no evidence of a return of the former symptoms.—*N. O. Med. and Surg. Journ.*, Sept., 1889.

THE RELATIONS OF GROWTH OF THE BODY TO ITS ORGANS.—From an analysis of a large number of observations made in the Pathological Institute of Munich, K. OPPENHEIMER makes the following deductions:

1. The bodily weight reaches its highest relative standing earlier in females than in males. The weight of the adult man is about twenty times as great as at birth; that of the adult woman eighteen times as great. The length of the body reaches its highest relative point in man at the age of 15 years, when it amounts to 158 cm.; in woman the highest relative point is reached at the same age and amounts to 153.6 cm.

2. The growth of the lungs surpasses that of the body as a whole at nearly all periods, and especially at the middle period of growth.

3. The heart increases approximately in proportion to the entire body.

4. The spleen and kidneys increase proportionately with the heart.

5. The liver and notably the brain do not develop proportionately with the body.

6. The relative lack of development in the liver and brain is compensated by the rapid relative increase of fat and muscle, particularly the latter.

INCOMPLETE ABORTIONS.—DR. A. B. CARPENTER, of Cleveland (*Cleveland Med. Gaz.*), is strongly opposed to the expectant treatment of these cases, as he finds in it very grave sources of danger to the patient. Such cases require, on the contrary, prompt and radical treatment, whereby the retained products of conception are removed manually or otherwise. He finds the manual method unsatisfactory, and is disposed to adopt the method of Martin, of Berlin, who anesthetizes his patients and cures and douches the uterus with antiseptic precautions, completing the operation by applying tincture of iodine to the endometrium by means of the uterine syringe. In the after-treatment Dr. Carpenter avoids the use of opiates, but employs antipyrin with advantage.

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SATURDAY, NOVEMBER 2, 1889.

CRIME AND INSANITY.

The universal testimony of all who have paid attention to the subject, is that insanity is incomparably more frequent among the inmates of prisons than in the general population. While one insane person to three hundred would be considered a large proportion of insane in a community, careful observers have found from 3 to 5 per cent. of prisoners to be either insane or imbecile. Such a state of affairs can only be accounted for on the supposition that very many convicts are either insane or strongly predisposed to insanity at the time of their conviction, or that there is something in the influence of prison life specially favorable to the development of mental derangement. Doubtless all of these elements contribute to the result. Frequently as the plea of insanity has been abused to defeat the ends of justice, there can, unfortunately, be no doubt that it is far from being a rare occurrence for persons to be sentenced as criminals who were, at the time of the commission of the unlawful act, influenced by insane delusions, actuated by morbid impulses, or incapable, by reason of mental enfeeblement of appreciating the true nature and results of their actions. The mistakes of juries in this respect are numerous, and the interpretation of the law, in this country and Great Britain, has been such that many persons whose mental unsoundness was recognized and admitted, have still been held legally responsible for the results of their disease. In a still larger proportion of cases, probably, although no dis-

tinctly morbid symptoms had been noticed before the commission of crime, there was such a predisposition to mental disease as rendered its development certain under favoring conditions. It is well known that habitual criminals are, as a class, not only uneducated, but of a low order of intellect, and incapable of any high degree of mental development. Defects of physical development, such as are frequent among the insane and idiotic, are so common in criminals that LOMBROSO and his followers maintain that habitual criminality is a disease, capable of physical diagnosis, and equivalent to moral insanity. We do not believe that this view is correct, as it certainly is not indorsed by most of those who have made a study of the subject, but although we believe it a mistake to elevate criminality to the rank of a distinct disease, there can be no reasonable doubt that it is often the result of an abnormal organization.

Making all reasonable allowance for these factors, it must, we fear be admitted that the influences of prison life are, in many cases, calculated to develop tendencies to mental disease which might, under more favorable circumstances, lie dormant. This is, probably, to a certain extent, unavoidable. The sense of disgrace, the loss of liberty, the injury as regards prospects for the future, are depressing influences which might be sufficient, of themselves, to unbalance a brain already predisposed to disease. In many cases, however, even in what are considered well-managed prisons, there are influences at work, in the monotony of the life and the lack of healthy occupations for the mind, to say nothing of the frequently unwholesome conditions as regards light, ventilation and food, which are needlessly unfavorable to the preservation of mental soundness. To discuss the general subject of prison administration would not be in place here, but it need hardly be said that in so far as a system, or lack of system, favors the development of insanity, it is neither humane, just, nor economical.

Judging from the experience of the past, it is scarcely to be expected that any efforts for a more scientific and humane interpretation of the law in reference to the insane accused of crime will meet with immediate success. The prospect in regard to prison reform is perhaps more encouraging. The law passed at the last session of the New York legislature, providing for an extension to

all the prisons of the State of the system of grading convicts according to their conduct, furnishing regular instruction and allowing suitable cases liberty on parole, which has worked so satisfactorily at the Elmira Reformatory, must be considered a long step in advance, and can hardly fail to find imitators elsewhere. By rendering the conditions of prison life more healthy, and less hopeless, it is reasonable to expect that it will materially reduce the number of those becoming insane during their confinement. The proportion of insane among convicts will, however, doubtless continue to be large, and the question of their treatment is one in which our profession should feel an interest and might reasonably hope to exert an influence.

In most of the States of this country, so far as we are aware, insane convicts receive very little treatment appropriate to their condition. If it is impracticable or unsafe to work them with other prisoners, they are generally confined in solitary cells, and no systematic attempt is made to divert their minds from their morbid ideas by recreation or employment. The natural result is that cases which might recover under suitable management drift on into hopeless dementia. At the expiration of their term of imprisonment they are sent to swell the multitude of hopeless chronic cases which crowd the wards of public asylums. Their presence there is objectionable in many ways. Although many of them are as inoffensive as most of those with whom they are brought in contact, there is always a considerable proportion in whom moral degradation is more conspicuous than intellectual impairment, and who, by their violence, insubordination, and continual attempts to escape, exercise a constant disturbing influence. Even when not personally objectionable, their presence is often felt as a degradation by such of their fellow-patients as are capable of being influenced by such feelings.

In addition to discharged convicts, nearly all State asylums contain more or less patients who have escaped trial or conviction for crime on the ground of insanity, to whom the same objections apply. In some such cases insanity has been feigned in order to escape the just penalty of wrong-doing, and it is frequently the case that it is not so well marked as to satisfy the public sentiment as to the innocence of the accused. Escapes under such circumstances are particu-

larly unfortunate, and we have reason to think they are not very infrequent. The organization and discipline required by this class are different from those best adapted to the treatment of the great bulk of the insane, and to the attempt to treat both classes together is not calculated to promote the best interests of either.

The solution of the difficulty lies, unquestionably, in the provision of separate institutions for the treatment of this class. Of these there are already two in this country, in New York and Michigan, and the Legislature of Vermont, at its last session, provided, in the act establishing a State asylum, that detached wards should be built for the accommodation of the criminal insane. The experience of the institutions already in operation has shown the advantages of this plan both to the insane convicts and the population of the other asylums. Such institutions should be constructed and administered with prime regard to security, which need not be inconsistent with a very considerable degree of liberty and comfort to a large proportion of the inmates. They should receive all insane convicts as soon as their malady becomes evident, that they may have the benefit of early treatment. In case of recovery, they should be returned to prison to serve out the unexpired portions of their sentences. Persons accused of felony and found to be insane should also be committed to these institutions; and it might be well to provide, as has been done in Michigan, for the removal to them, from the other asylums, of those patients who, by persistent homicidal propensities, are a constant menace to the safety of their fellows. Each of our more populous States has enough insane of these classes to justify the erection of a separate institution for their care, and there are few in which the existing asylums are not already so crowded as to make additional accommodation necessary.

In Arkansas additional room is needed for the insane, and the superintendents of the asylums and the State Board of Charities unite in recommending the erection of a separate institution for this class. It is to be hoped, in the interest of all concerned, that the Legislature will take prompt action on this subject at its next session.

THE RADICAL TREATMENT OF SPINA BIFIDA.

Considerable attention is being directed, of late, to the treatment of spina bifida (*id est*, hydrorrhachis) by means of excision of the sac of the tumor. This is distinctly a reversion to first principles, inasmuch as the operation is by no means a new one, and has for many years past been discountenanced by the authorities as unproductive of the best results. But, like many another surgical procedure that has long since been laid away on the shelf, it bids fair to be freed from its venerable dust and appear again with new lustre. There are times, no doubt, when we all wish we were surgeons to take our part in the mighty innovations of modern surgery which are so rapidly removing the opprobria of our art; but whether we are surgeons or not, we take a just pride in the promotion of medical science, and hail with pleasure every advancement made in the direction of saving life and promoting human welfare.

Many years ago the surgeons felt obliged to abandon the radical operation for the relief of hydrorrhachis as altogether too dangerous and too barren of good results; indeed, most of our authoritative writers on surgery and obstetrics are still outspoken in their condemnation of such an operation, and as late as 1885 a committee appointed by the *Clinical Society of London* reported unfavorably upon the radical operation and approved of the treatment by iodine injections as the one most nearly imitating the process of natural cure and, therefore, most widely applicable. Nevertheless a sufficiently large number of successes obtained by the radical method have been recorded to raise a reasonable hope that a very decided improvement may be obtained by returning to the older plan of treatment. The treatment by iodine injections, which was popularized by the results secured in the hands of Brainard, Velpeau, Morton, Watt, Eate, Ewart and others, is, at best, unproductive of very satisfactory results. Thus, BRAINARD obtained a permanent cure in three cases out of seven, and VELPEAU in five out of ten. On the other hand, ROBSON, of Leeds, reports successful results in three of four cases operated upon by excision, while other and similar results are reported by Wilson, Atkinson, Howson and Barton, of England, and by Hayes and Hurd, of our own country. The latter, DR. H. P. HURD (*Ther. Gaz.*, Oct. 15, 1889), in describing his own case, has also reviewed the lit-

erature of the subject. As Dr. Hurd's citations of cases are mostly from English sources, it is with pleasure that we direct attention to four other cases which have recently been given publicity in Chicago, DR. A. E. HOADLEY having reported a successful case to the Chicago Medical Society (Oct. 7, 1889), and DR. CHAS. T. PARKES having reported to the Chicago Gynecological Society (Oct. 18, 1889) three cases operated on, with two successful results. Although such cases as these are not yet sufficiently numerous to enable one to predicate definite conclusions, they have at least subserved excellent purposes in proving that the radical method, in proper hands, is capable of yielding satisfaction. Furthermore, the testimony of these operators seems to indicate three pretty clearly defined facts:

1. That the escape of a considerable quantity of fluid from the sac is not necessarily attended by dangerous sequelæ.
2. That there is less danger from injury to the nerve structures than has been believed, and
3. That many of the unfavorable results of former operations were, doubtless, due to lack of proper precautions relative to the prevention of sepsis.

EDITORIAL NOTES.

HOME.

THE first medical degree ever given to an American woman was given forty years ago. To-day there are 2,500 women in this country having diplomas from either American or foreign schools.

YELLOW FEVER IN FLORIDA.—Surgeon-General Hamilton, of the Marine-Hospital Service, has received a telegram from Dr. Porter, at Key West, reporting another case of yellow fever at that place, and that quarantine restrictions have been resumed. The patient in this case is E. Ellinger, who left Havana September 21, bound for New York.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION will hold its annual session at Nashville, Tenn., November 12, 13 and 14, 1889. The following are the papers to be read: The President's Annual Address, Dr. Hunter McGuire, Richmond, Va.; "Report of Gynecological Work, with Especial Reference to Methods," Dr. R. B. Maury, Memphis, Tenn.; "Direct Herniotomy, with Cases," Dr. W. O. Roberts, Louis-

ville, Ky.; "Open Abdominal Treatment" Dr. B. E. Hadra, Galveston, Tex.; "The Abortive Treatment of Acute Pelvic Inflammation," Dr. Virgil O. Hardon, Atlanta, Ga.; "The Importance of Early Treatment of Inflammatory Affections of the Uterus," Dr. Wm. C. Dabney, University of Virginia; "The Relation of the Nerve System to Reporative Surgery," Dr. Thos. O. Summers, Jacksonville, Fla.; "Concerning the Causes of Frequent Failure of Relief of Reflex Symptoms after Trachelorrhaphy," Dr. W. F. Hyer, Meridian, Miss.; "Cranial Surgery," Dr. DeSaussure Ford, Augusta, Ga.; "The Treatment of Ectopic Pregnancy," Dr. W. H. Wathen, Louisville, Ky.; "Laparotomy in Extra-Uterine Pregnancy," Dr. Waldo Briggs, St. Louis, Mo.; "Epithelioma of the Penis," with the Report of a Case," Dr. D. W. Yandell, Louisville, Ky.; "Laparotomy in Intestinal Obstruction," Dr. C. Kollock, Cheraw, S.C.; "An Experimental Study of Intestinal Anastomosis," Dr. Jno. D. S. Davis, Birmingham, Ala.; "Operative Interference in Ascites," Dr. Hugh M. Taylor, Richmond, Va.; "Observations Pertaining to Pregnancy and Parturition," Dr. W. Duncan, Savannah, Ga.; "Puerperal Convulsions," Dr. Jno. Herbert Claiborne, Petersburg, Va.; "Some Remarks Upon Aneurisms, Relating More Especially to their Surgical Treatment," Dr. F. T. Meriwether, Asheville, N. C.; "Coccygodynia and Its Treatment," Dr. Hunter P. Cooper, Atlanta, Ga.; "The Improved Cæsarean Section *vs.* Craniotomy," Dr. W. D. Haggard, Nashville, Tenn.; "Conservative Surgery in Injuries of the Foot," Dr. J. T. Wilson, Sherman, Texas; "Gun-Shot Fractures of the Femur," Dr. Jno. Brownrigg, Columbus, Miss.; "Tropho-Neurosis as a Factor in the Phenomena of Syphilis," Dr. G. Frank Lydston, Chicago, Ill.; "Trophic Changes Following Nerve Injury in Fractures, with report of two cases," Dr. Wm. Perrin Nicolson, Atlanta, Ga.; "Treatment of Malignant Diseases of the Rectum," Dr. W. T. Briggs, Nashville, Tenn.; "Gynecology in its Relations to Obstetrics," Dr. W. L. Robinson, Danville, Va.; "Observations Based Upon an Experience of Seventy-five Abdominal Operations," Dr. Jos. Taber Johnson, Washington, D. C.; "Twenty Consecutive Cases of Abdominal Section," Dr. L. S. McMurtry, Danville, Ky.; "Triple Amputations," Dr. J. B. Luckie, Birmingham, Ala.; "The Treatment of Contracted Bladder by Hot Water Dilatation," Dr. I. S.

Stone, Lincoln, Va.; "Complications Occurring in the Clinical History of Ovarian Tumors," Dr. Richard Douglas, Nashville, Tenn.; "What Kind of Instruments Does Modern Antiseptic Surgery Demand?" Dr. J. W. Long, Randleman, N. C.; "Intestinal Anastomotic Operations with Segmented Rubber Rings, with Some Practical Suggestions as to Their Use in Other Surgical Procedures," Dr. A. V. L. Brokaw, St. Louis, Mo.; "Leucocythæmic Tumors as a Neoplastic Exponent of Rheumatism and Their Similarity to Malignancy—with a Case," Dr. W. Locke Chew, Birmingham, Ala.; "What Civilization is Doing for the Human Female," Dr. A. Laphorn Smith, Montreal, Canada; "The Achievements of Modern Surgery," Dr. J. Ewing Mears, Philadelphia, Pa.; "The Treatment of the Pedicle in Suprapubic Hysterectomy," Dr. Wm. M. Polk, New York; "Pus in the Pelvis and How to Deal with it," Dr. Joseph Price, Philadelphia, Pa.

Members of the profession are invited to attend.

EXTENT OF THE OPIUM TRAFFIC.—The Massachusetts Board of Health has been making a series of investigations for the purpose of learning the extent of the opium traffic in that State. The result shows that while the use of the drug is not rapidly increasing it yet has a strong hold among all classes. Circulars were sent to the druggists and older physicians. Among the inquiries and replies are these:

1. From your own observation is the use of opium and its preparations increasing in the community in which you live? Two hundred and twenty-five answers received; 66 per cent. replied no, 28 per cent yes, 6 per cent. do not know.

2. If such be the case, what is the probable cause of such increase? Twenty per cent. give the use of opium by physicians as the sole cause, 11 per cent. give this as the cause in part. Ease of obtaining opium from druggists, excessive brain work, desire for stimulation, fast living, comprise most of the remaining answers.

3. Are diseases calling for the use of opium increasing? Two hundred and nine answers; 84 per cent. no, 16 per cent. yes.

4. In what form or manner is it employed? One hundred and sixty answers; 30 per cent. all forms, 22 per cent. morphia, 13 per cent. morphine and laudanum, 12 per cent. morphia by the mouth and hypodermically, 10 per cent. morphia hypodermically.

5. Does the prohibition of alcohol increase its (opium) use? Two hundred and two answers; 67 per cent. no, 10 per cent. yes, 3 per cent. possibly, 20 per cent. do not know.

6. What classes of people mostly use it? One hundred

and sixty-six answers; 30 per cent. all classes, 22 per cent. higher, 8 per cent. middle, 6 per cent. lower, 12 per cent. middle and higher, 14 per cent. nervous women, 8 per cent. do not know.

THE PHILADELPHIA POLYCLINIC AND COLLEGE FOR GRADUATES IN MEDICINE.—The Board of Trustees, in recognition of distinguished services rendered the institution, as former Professors, have elected Richard Levis, M.D., Emeritus Professor of Surgery; J. Solis-Cohen, M.D., Emeritus Professor of Laryngology; Charles H. Burnett, M.D., Emeritus Professor of Otolaryngology; and Charles B. Nancrede, M.D., who was recently called to the Chair of Surgery in the University of Michigan, Emeritus Professor of General Orthopædic Surgery.

An additional Chair of Orthopædic Surgery was created and Thomas G. Morton was elected Professor. Professor Morton will utilize the vast clinics of the Orthopædic Hospital and Infirmary for nervous diseases, Professor S. Weir Mitchell having for some time past used the Nervous Department.

A new Department of Dentistry was created and the Faculty was authorized to place a competent teacher in charge until the next meeting of the Trustees.

A new Department of Experimental Therapeutics and Physiology was created, and Thomas J. Mays, M.D., was elected Professor.

The Chair of Clinical Surgery was filled by the election of Thomas S. K. Morton, M.D., Professor.

C. L. Bower, M.D., was elected Adjunct Professor of Clinical and Operative Surgery, and J. Abbott Cantrell, M.D., Adjunct Professor of Diseases of the Skin.

The Chair of Pathology was left vacant until the next meeting.

The report of the Building Committee was read, in which it was stated that contracts had been signed for preliminary work to the amount of \$23,150. About \$30,000 will be required to finish the building, and it was decided to push the building to completion as fast as the donations for the purpose could be obtained. The overcrowded condition of the present building makes it necessary to use every exertion to move into the new building in the early spring, even though it be unfinished.

REMBRANDT'S "LESSON IN ANATOMY."—Rem-

brandt's celebrated picture entitled "A Lesson in Anatomy," a full size copy of which hangs at present in the hall of the College of Physicians of Philadelphia, has, we understand, been purchased by Mr. Ellesworth, for the Institute of Art, of Chicago. It formerly belonged to the Princess de Sagan, and until recently has been in an art gallery in the Hague.

THE RED CROSS AT JOHNSTOWN.—Miss Clara Barton has communicated to one of the Johnstown newspapers the decision of the Red Cross Association to bring to an end the relief campaign in the Conemaugh valley. The present organization will be disbanded to give place to a lesser relief administration, under local control, which will receive from Miss Barton all supplies that remain undisposed when she departs. This has been the most exacting campaign through which the American Red Cross Society has been called to pass; the records show that over 30,000 reliefs, medical and other, have been granted during the past four months.

FOREIGN.

DR. PHILIPPE RICORD, the celebrated French surgeon, is dead. He was born in Baltimore, Md., December 10, 1800.

GERMAN STUDENTS' DUELS.—The *British Medical Journal* says that two students, one belonging to the medical and the other to the legal faculty of the University of Halle, have recently been condemned to three months' imprisonment in a fortress for fighting a duel with pistols, although neither of them was hurt. It appears from this that a paternal Government will only allow bellicose *Burschen* to avenge their honor by slashing each other's faces.

DR. P. MÉNIÈRE has resigned the management of the *Gazette de Gynécologie*, published in Paris, France, on account of ill-health. Dr. Phillippeau is his successor.

BRITISH MEDICAL ASSOCIATION.—It is probable that the 1891 meeting of the Association will be held in the ancient city of Bristol, the metropolis of the West of England, a city noted for its historic buildings and romantic surroundings.

PRESIDENT DE WINTON, of the geographical section of the British Association, states that American climate has improved the physique of the Anglo-Saxon race.

TOPICS OF THE WEEK.

THE ACIDS OF THE STOMACH.

There is no doubt that the chief acid found in the stomach during natural digestion is free hydrochloric acid. This has been abundantly proved by Bidder and Schmidt, and numerous observers succeeding them. The methods used are, however, too long and too complicated to employ in clinical work. The physician wishes to know what, in a particular case of disease, are the chemical changes going on in the stomach: whether, for example, hydrochloric acid is present as well as pepsin and organic acids. Now, in the examination of the contents of a diseased stomach three forms of acid may be present—hydrochloric acid, a mineral acid; organic acids, such as lactic acid, butyric, etc.; and thirdly, acid phosphates. It is chiefly of importance to determine the presence of hydrochloric acid and of organic acids. Many methods have been proposed for doing this; they consist mainly in testing the effect of the stomach contents on various colored solutions. Thus a solution of methyl-violet is decolorized by hydrochloric acid, so that if this reaction is obtained the free acid is present in the liquid tested. Lactic acid turns the violet a dirty yellow. Tropæolin also is turned deep reddish-brown by free hydrochloric acid. Unfortunately these tests, simple as they appear, are not accurate, since the reactions are interfered with by the presence of peptones and of some neutral salts, and, as these are usually present in the stomach contents, no reliable results can be obtained by using methyl-violet and tropæolin. They have been superseded by congo-red, which is turned blue by free hydrochloric acid, and by a solution of vanillin and phloroglucin in alcohol, which is turned a deep red by the same acid. These simple clinical tests are, however, rendered useless by the fact that they are interfered with by the presence of peptone, ammonium salts, chlorides, and phosphates.

In the present state of our knowledge, therefore, there is no reliable indicator for the presence of free hydrochloric acid in the stomach contents. Other methods which may be used are too complicated for clinical use. Thus ether has the property of dissolving organic acids from a liquid, leaving the mineral acids in solution. It may thus be used for separating the lactic, butyric, and other acids from the hydrochloric acid; and if in a liquid obtained from the stomach it is found that ether removes the whole of the acids present, it may be concluded that no free hydrochloric acid is present. In many cases this conclusion would be an important one as a clear indication for a line of treatment. Dr. Leo has lately¹ published a new method for the indication of free hydrochloric acid which may prove useful. Leo considers the case where it is only a question of the presence of free hydric chloride, and of an acid phosphate. To a few drops of the stomach contents a pinch of carbonate of calcium is added; if the acidity, as tested by litmus paper, disappears, only a free acid is present, but if the liquid is still acid after the addition of the chalk, an acid

salt is present. If, moreover, organic acids be present, they must be first removed by shaking with ether before the chalk is added. It does not seem that Leo's method is one that can be applied at the bedside, because the detection of free hydrochloric acid is chiefly requisite in those cases in which organic acids are also present, as in cases of dilated stomach. At present, indeed, a ready method, suitable in clinical practice for the detection of free hydrochloric acid in organic liquids is a desideratum. —*British Medical Journal*.

PROFESSOR CHARCOT.

It would seem almost superfluous to say anything of Dr. Charcot, as he is already so well known in the profession. He is certainly one of the most remarkable medical characters of the day, and even physically his person and features bear a peculiar stamp. He is a man of ordinary stature, 55 years of age, and stoops a little. His face is pale and clean-shaven, resembling very much that of the first Napoleon, and giving the impression of a thoughtful mind. After having for a long time devoted himself to the study of pure pathological anatomy, he gave himself up to the clinical study of nervous affections, a scientific territory till then almost unexplored. He here displayed rare qualities of observation, an exemplary patience, a marvelous prudence, and the most perfect method. He has won the intellectual esteem of his bitterest opponents, a world-wide reputation, and the assurance of having attached his name to a work which will remain imperishable. Prof. Charcot's clinic at the Salpêtrière is well known, and constitutes the greatest scientific centre in France for the study of the pathology, diagnosis and treatment of nervous diseases. It is attended by physicians and students from all parts of the world, where they find a vast amount of clinical material and the complete methods of study organized and developed by the eminent professor, aided by a body of distinguished pupils and assistants who surround him in his daily visits. For many years Prof. Charcot has taken a foremost place among the leaders of medical science: his clinique, his laboratories, his works and his pupils constitute one of the chief glories of the faculties of Paris. His lectures are most impressive; he is sober in manner, clear in diction, picturesque in illustration, original in conception, indefatigable in research, and spares neither time, labor nor wealth in using all the methods of clinical illustration at his disposal. It would be fastidious and useless to analyze here all his discoveries; I would simply refer to some which leave the narrow limits of medicine and touch somewhat on philosophy. In the chaos of the notions acquired on cerebral function it can not be denied that it was Charcot who was the first to throw light on the subject, in finding, as if by a stroke of genius, the method which permitted him to fix the cerebral motor localizations. He, at the same time with Kussmaul, taught men the mechanism of their memory and of their language. And who does not remember the debates on the questions of magnetism and of hysteria that have so recently taken place among the lay and medical public? It was Dr. Charcot who, armed with his scientific *sangfroid* and method, reduced to definite

laws facts which, in appearance, were the most incoherent. I may here observe that to the Hospice of the Salpêtrière, which was originally intended only for the aged and insane of the female sex, there being 3,145 of the former and 720 of the latter, there have been added forty-two beds for male patients and a certain number of female patients suffering from nervous diseases, which additions were made for the most special study of diseases of the nervous system. It may be said that Dr. Charcot began his professional career at that asylum. He was interne in it in 1852, and became physician in 1862. He was appointed professor of diseases of the nervous system in 1881, a chair which was created for him. Since 1862 he has not ceased to give his memorable series of lectures and clinical conferences, which are held every Tuesday morning at the Salpêtrière, and on Friday morning he holds consultations, both of which are always well attended. In addition to the above there are thirty beds for children afflicted with nervous diseases, and 200 beds for epileptics. Besides these he has the control of a series of infirmary wards, into which are brought all the patients whom he desires to select from among the infirm women who are the permanent inmates of the other parts of the Salpêtrière. Altogether he has at his disposal for clinical study and under direct treatment more than 2,000 patients. No wonder, then, that with this vast experience Prof. Charcot should be regarded as the highest authority on nervous affections. He is also a member of the Academy of Medicine.—Paris Correspondence, *Boston Med. and Surg. Journal*.

WHAT REAL VALUE HAVE THE NATURAL MINERAL
WATERS IN THE TREATMENT OF DISEASES
OF THE SKIN?

At the recent meeting of the American Dermatological Association DR. L. D. BULKLEY, of New York, presented a paper in which he discussed the subject of natural mineral waters in the treatment of disease, and from which we make the following extract:

It is the popular impression that natural mineral waters help certain skin diseases; that some are to be applied on the outside, and some are to be taken internally for the purpose of washing out the noxious agent. No doubt many cases are benefited, but any one who has seen many cases of the effects of natural mineral waters must be many times disappointed. The water is but one element in the case; hope and faith may play an important part. Then there is the change of scene, rest from ordinary occupation, and, perhaps, the enforcement of regular hours.

In Europe, most of the springs have resident medical advisers, but, unfortunately, there are few of them in this country. It should be remembered that in certain instances other appropriate remedies are being taken at the same time; witness the treatment of syphilis at the hot springs of Arkansas. But in any case it is the water, pure and simple, which contributes most to the cure. Most of the waters have little effect upon the skin, but reach especially the kidneys, liver, bowels, etc. We cannot always predict the effect of the water from its chemical analysis. Certain mineral waters are taken hot at

the springs, but cold, or even in ice, when at a distance. In the case of iron, arsenic and bromine springs, the results are rather indefinite. Sometimes cutaneous diseases depending on debility will be improved. We have all seen cases of eczema which have been treated at the sulphur springs in vain. Where there is a rheumatic element back of the cutaneous lesion, no doubt some good can be received; but in those cases it is the alkaline water, and not the sulphur, which is of benefit.

Like all other remedies, the use of springs must be carefully prescribed in order to be of the greatest use. Probably more benefit is derived in eczema than in other diseases, and even then it should be toward the close of the case. First, should be used the alkaline and moderately purgative waters, and then a tonic course. Carlsbad is advisable where there is a large abdominal plethora. In acute cases the hot springs should be used. Care must be taken lest acute eczema be excited by the springs, for some very severe cases have been lighted up in this manner. In psoriasis, sometimes sea-bathing is of far more benefit than the mineral springs. In syphilis, little benefit follows unless other treatment is kept up. Acne will sometimes be benefited somewhat, and the iron springs are better than the sulphur. The chief difficulty in the use of this treatment is the fact that these patients are not under supervision, and are apt to follow their own fancy or the guidance of the attendants at the baths.

INJURIES BY RAILROAD.

Railroad business and travel is a topic that is absorbing increased attention every year, and new guards against danger are being constantly applied. A monster petition, containing nearly 10,000, names of brakemen, has lately been sent to the Interstate Commerce Commission, asking them to urge upon Congress the necessity for legislation requiring the use of automatic brakes and couplers on freight cars; and when it is remembered that something like 450 men are killed, and 4,000 injured every year in operating freight cars, the subject assumes great importance. An article in *Scribner's Magazine* for September gives the following facts on the general topic of safety in railroad travel:

When one reflects upon the destructive energy which is contained in a swiftly moving train, and sees its effects in a wreck; when he understands how many minute mechanical details, and how many minds and hands must work together in harmony to insure its safe arrival at its destination, he must marvel at the safety of railroad travel. In the year 1887, the passengers killed in train accidents in the United States were 207; those injured were 916. The employes killed were 406, and injured 890. These were in train accidents only, it must be remembered, and do not include persons killed at crossings, or while trespassing on the track, or employes killed and injured making up trains. As will be seen later, the casualties in these two classes are much greater than those from train accidents. The total passenger movement in 1887 was equal to one passenger traveling 10,570,306,710 miles. That is to say, a passenger might have traveled 51,000,000 miles before being killed, or 12,000,000 miles before being injured. Or he might travel day and night steadily at the rate of 30 miles an hour for 194 years before being killed. Mark Twain would doubtless conclude from this that traveling by rail is much the safest profession that a man could adopt. It is unquestionably true that it is safer than traveling by coach or on horseback, and probably it is safer than any other method of getting over the earth's surface that man has yet contrived, unless it may be by ocean steamer. If one wants anything safer, he must walk.

PRACTICAL NOTES.

EXALGINE IN NEURALGIA.

Attracted by the report of Dujardin-Beaumez and Bardet on the properties of this agent, DR. FREDERICK PETERSON, of New York, has emphasized it in a number of neuralgic cases with satisfactory results. He administered it both in the form of pills containing 2 grains each, and a cordial with $2\frac{1}{2}$ grains to the tablespoonful. He finds it a valuable analgesic, and has succeeded in curing with it a number of cases of cephalalgia, facial neuralgia, brachial neuritis, etc. In some cases of failure he believes that his doses were too small and that one should, in most cases, begin with doses of from 4 to 6 grains, repeated every two to four hours. Exalgine is very soluble in water containing a little alcohol, but only slightly soluble in cold water. It acts very energetically upon the cerebro-spinal axis in animals, giving rise to phenomena of impulsion, tremor and paralysis of the respiratory muscles. In non-toxic doses sensibility to pain disappears, but that of touch persists; it produces also a gradual but notable fall of temperature. Its effects are somewhat similar to those of antipyrin, but its effect upon sensibility is more marked and upon the thermogenic centres less. In therapeutical use exalgine produces no rash cyanosis or gastrointestinal irritation. It is eliminated by the urine modifying its secretion, and in diabetic polyuria it diminishes the daily amount of urine and the quantity of sugar.—*New York Medical Record*.

INCOMPATIBILITY OF ANTIPYRIN WITH OTHER DRUGS.

M. CHARLES has called attention to the precipitate which is formed by mixing solutions of antipyrin and cinchona, and M. Ferand has made later some experiments which warrant him in saying that in mixtures containing antipyrin and cinchona all the active principles of the potion are precipitated and leave in the filtered liquid scarcely a perceptible trace of antipyrin and the alkaloids. He notices, as did M. Charles, that the precipitate is readily soluble in weak acids, from which he concludes that the potion does not become inert, as the precipitate should dissolve in the gastric juice.

M. Blainville, pharmacist, records a new incompatible with antipyrin; having had occasion to mix 4 grams of antipyrin and 5 grams of hydrate of chloral and 15 grams of water, he found the mixture became milky, then clearing, deposited an oleaginous liquid. Decanted, this liquid possessed neither the taste of antipyrin nor of chloral, but resembled coriander seeds.

Upon the subject of incompatibles, which are discovered each day by pharmacists, M. Ferand

remarks that they should avoid mixing substances as complex as antipyrin with chemicals capable of modifying its composition and, consequently, its physiological action.

Formulas the most simple, said he, such as distilled water sweetened, should be the rule when prescribing a new body used in therapeutics before all its chemical characteristics are thoroughly studied.—*La France Médicale*.—*Times and Register*.

PIROTOXIN AS AN ANTIDOTE TO MORPHINE.

From experimental investigations A. BÓKAI (*Cent. für Klin. Med.*, No. 33, 1889) is convinced that picrotoxin is the most rational antidote to morphine. Picrotoxin and morphine produce antagonistic effects upon the respiratory centre, the latter paralyzing its action, while small doses of picrotoxin increase it and inhibit the paralyzing influence of morphine. Further, picrotoxin irritates the vaso-constricting center of the medulla and is, therefore, capable of hindering the rapid fall of blood pressure in morphine poisoning. The two agents likewise have opposing effects upon the hemispheres. Picrotoxin also deserves attention from the fact that it may be given in the place of the nux vomica preparations and may perhaps be found a good prophylactic for chloroform asphyxia.

CHLOROFORM ADMINISTRATION.

The administration of chloroform in preference to ether is much more common in Europe than in this country. Several deaths having recently occurred in the Paris hospitals from the use of chloroform, the surgeons are beginning to seek a safer anæsthetic, and it is now proposed to substitute the chloride of methylene, or, more properly, *methyl chloride*. PROF. REGNAULD has called the attention of the Académie de Médecine to this agent, which was formerly regarded with favor by Sir Spencer Wells and Richardson. Regnauld finds that in reality the so-called chloride of methylene is nothing but a mixture of four parts of chloroform and one part of methyl alcohol. Its action is very much slower than that of chloroform, but it is hoped that it will prove proportionately safer.—*N. Y. Medical Journal*.

DEATH FROM SULPHONAL.

DR. R. R. PETITT reports a case of death from the administration of sulphonal. The patient, a woman 28 years old, was suffering from melancholia. She took 15 grains of sulphonal, and about an hour later the dose was repeated. Soon after she went to sleep and could not be aroused for twenty-four hours. Death occurred from failure of respiration forty hours after the dose was taken.—*Medical News*.

SOCIETY PROCEEDINGS.

Obstetrical Society of Philadelphia.

Stated Meeting, September 5, 1889.

DR. JOHN C. DA COSTA IN THE CHAIR.

DR. JOHN DA COSTA :

AN EASY METHOD OF REPAIRING THE PERINEUM.

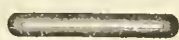
There is probably not any operation in gynecology which gives a woman so much relief as the proper restoration of a torn perineum.

In describing this operation I shall not say a word in regard to the anatomy of the perineum, which is the same as it was a hundred years ago. The same muscles are torn now as were torn then. This subject of tear of the perineum may seem to be a very simple matter; but when we consider that 20 per cent. of women have their perineum torn in first labors, and 4 per cent. in subsequent labors, it ceases to be a little matter, and becomes one of importance.

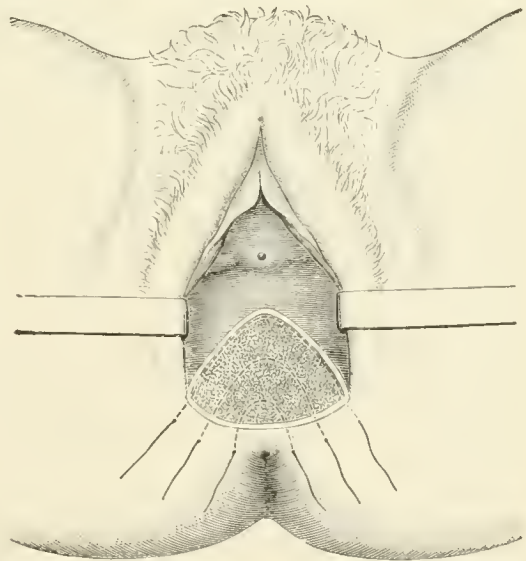
I do not claim anything new. The operation is the result of a combination of old ideas. It is an easy and simple method of repairing the perineum, and answers equally well whether the tear is long or short. I thought I had something new in the use of these rubber bars, when I got it up eight years ago, but afterwards found that one of my ideas had been anticipated twenty years before.

Mr. Lane, of London, in 1860, used ivory bars with small perforations, and reports thirty consecutive cases without a failure. Dr. Thompson, of Washington, used flat rubber bars with small holes in them, and reports fifty-three consecutive cases, all cured. Dr. Thomas, after speaking of the quill suture, leads us to infer that he used perforated bars, and states that he does not recall a failure in the operation.

I do not know how many present are believers in the idea advanced four or five years ago, at the meeting of the American Gynecological Society in this city, "that there is no such thing as a perineum;" but there certainly is a triangular body between the vagina on one side and the rectum on the other, and this triangular body is often torn through during labor, and becomes what I call a ruptured perineum. There are many ways of repairing it. Some are very simple, some are very striking but very useless; what I strive to do is to restore the perineum very much as nature made it. The operation is easy and the armamentarium is simple. We require a pair of scissors (I use a pair of blunt-pointed scissors), a perineal needle, a little silver wire and shot, a shot compressor, and two bars shaped like the cut.

Bar, $\frac{1}{2}$ size.

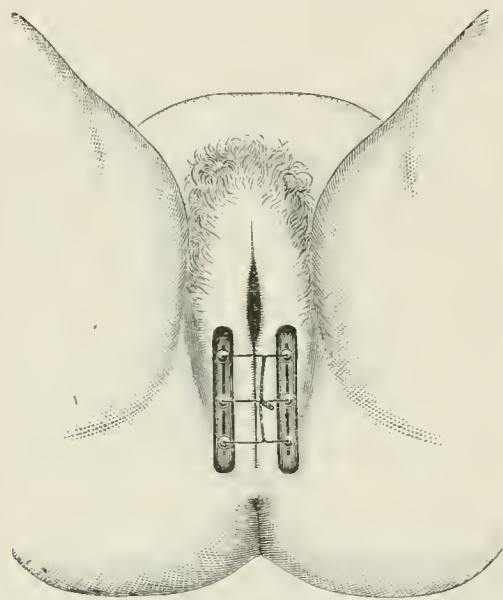
The operation is begun at the bottom of the tear in the vagina. With one or two fingers in the rectum, I make a little slit at the lowest point and denude subcutaneously all the tissue that has been torn. I do not know how far up I go—it may be 2 inches, or even nearly the length of the finger. This depends altogether upon the extent of the tear. The important thing is to get rid of all the scar tissue. Unless this is done, good union will not be secured. After denuding up the proper distance the scissors are turned to the right and to the left, and each side denuded. Then, with four cuts of the scissors, the loosened cicatricial tissue is removed. A denudation of this kind freshens the torn perineum as I think no other method does. The first stitch near the bottom of raw surface is passed three-fourths of an inch from the edge of the cut portion, buried in the tissue the whole distance, and comes out at the same distance on the other side. The needle is then threaded with silver wire and withdrawn. The second stitch is put in the same way. The third stitch is started in the skin like the others, and three-fourths of an inch from the edge of the cut, carried along just under the edge of the denudation the whole way around. This is the most important stitch of all. It was the idea of the late Albert H. Smith, when one of the physicians-in-chief at the Nurses' Home some years ago. The stitches are buried throughout, and only three are used in the operation. All that is necessary is to bring them out in nearly a straight line.



Surface denuded, and stitches in place.

The wires are then slipped through slotted rubber bars, on each side, and shot-clamped on them. After the shot are clamped the ends of the wires are twisted over the median line and the ends passed through a piece of catheter. In twenty-

four hours there is swelling and a certain amount of inflammation. I then cut the wires off close above the shot, and this at once relieves the tension and the pain. Any desired dressing may then be applied, if it is thought advisable to use any dressing.



Operation finished, and bars in place.

What are the advantages of this operation? In the first place you have but three stitches. I think that probably every gentleman has seen perineæ operated on where there has been deep quilting, and have seen the tissue slough out because the circulation has been so interfered with that nutrition could not be maintained. These three sutures interfere very little with the circulation and they hold together the deep parts of the wound, which is very important. When inflammation takes place you cut the wires over the shot, the bars spread and relieve the tension, and prevent any tendency to sloughing, while still supporting the parts.

After the wound is closed, you may take a piece of catgut and whip up the edges in the vagina, and along the line of the raphé. This is not necessary unless we want to make a very perfect job. The operation is easily and quickly performed. I have never timed myself, and have never tried to do the operation in a hurry, but I accidentally found out how long it takes.

On one occasion, in thirty minutes from the time that I began, I had operated on two cases, and this included the time necessary to put one patient under ether from perfect consciousness to unconsciousness. The denudation is accomplished in four or five minutes.

This is a different operation from that in which the denudation is made in curved lines, and where another operation is required for any ex-

isting rectocele. The operation described above will include also a rectocele. It is better than another popular operation, which does not restore the triangle which nature made, but makes a beautiful skin-flap, which looks well from the outside, but affords no support.

I do not claim anything novel. It is simply a combination of ideas that I have picked up from time to time. In regard to the results of the operation, it is a rare occurrence to have a failure.

DR. J. PRICE: There are a few points about which I should like to speak in connection with this procedure and like procedures. As Dr. Da Costa has said, this is an old operation, and is illustrated in all the books. It is the old operation upon the posterior wall, and has the merit he referred to, of, in many cases, making a superficial or skin perinæum. The principle of suturing described is one not adopted in any other branch of surgery, and Dr. Da Costa would himself not apply this principle in any other portion of the body. He says that sometimes he denudes a distance of three inches. In no other part would he approximate such a surface with three sutures, and three sutures will not close it.

A word in regard to the denudation. He speaks of four clips of the scissors—the button-hole, the central, and the two lateral. In many cases it is impossible to make such a denudation. You will button-hole the flap many times. That was the trouble with the Smith and Jenks operation. It is difficult to make a clean denudation in the midst of scar tissue by such a method.

One of these illustrations shows what takes place in many perineal tears. The skin-perineum side is not harmed; but if you place your finger in the sulcus on one side, you will find a sense of resistance which is absent on the other side. The sulcus is a deep one, and is a lateral tear. As has been remarked by Dr. Deaver, "It is for all the world like the lateral cut for stone." In such a case the procedure is almost a unilateral one to bring up the pelvic floor. It is just such a state of affairs that Emmet had in view in his classical operation for the restoration of the pelvic floor or diaphragm, and he has most beautifully succeeded.

In regard to the use of this needle. Dr. Da Costa has referred to the fifty-three cases reported by Dr. Thompson of the Columbia Hospital; but he lost one or two from tetanus, and this bayonet was at the bottom of the tetanus. I look upon this needle as wholly unjustifiable in any surgery. No man has a right to have such a thing among his instruments. I am surprised that more do not die from such a stab, including, as it does, incongruous masses of tissue, skin, fat, muscles, vessels, and nerves. I remember, while a student, of seeing a death from such a stab. I use the smallest sewing needle possible.

These procedures are very old, and are illus-

trated in all the old works. I consider all two-or-three-stitch methods of closing the perineum as emphatically imperfect procedures.

DR. JOHN C. DA COSTA: What Dr. Price has said in regard to one of these illustrations has nothing to do with the subject under discussion. He refers to a tear of the vagina, which has nothing to do with a tear of the perineum. If there is a line of cicatricial tissue on one side, we do not need to denude both sides to repair the condition. It is a simple matter to remove the scar tissue and sew it up, as in any other surgical operation.

I am sorry to hear this tirade against this needle. Some very able men use this needle, and they get very good results. Albert H. Smith, who did a good deal of gynecological work, used a needle much like this. One of the most successful abdominal surgeons in Philadelphia uses a needle much like this. Surgeons in all branches of surgery use needles very like this—either a little more or a little less curved. One who came from Europe a year ago showed me a long, curved needle which he brought with him and said was Tait's needle. It was precisely similar to one which I have had in my box for some years for use in complete laceration of the perineum. This is only the Baker-Brown needle modified.

I do not know that Dr. Price has said anything against this operation. He has talked a good deal about the needle and about a tear that does not apply at all. I can only say, that, despite his fears, the operations are almost uniformly successful. Any one who can do the ordinary quill operation can do this. After analyzing the various operations eight years ago, I found that the best results were obtained by the old-fashioned operation. The quill operation, however, made a V-shaped sinus to the bottom of the wound, and sometimes caused a great deal of trouble; and it was to overcome this objection that I substituted the hard rubber bars with the wires running through.

(To be continued.)

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Meeting of the Section on Practice, New York Academy of Medicine—Dr. A. Jacobi on Chronic Peritonitis—Discussion by Drs. Francis Delafield, Wm. H. Thomson and L. Weber.

At the October meeting of the Section on Practice of the Academy of Medicine Dr. A. Jacobi read a paper on "Chronic Peritonitis, with Special Reference to the Differential Diagnosis of Some

of its Varieties." Most of the cases, he said, were of a secondary nature, with a great variety of causes. Having mentioned a considerable number of these, he referred to the case of a young woman whom he saw dying of acute peritonitis, who had been affected with purpura for some weeks. At the autopsy the peritonitis was found to have resulted from the rupture of some of the vessels of the diaphragm. He considered the most frequent cause of peritonitis a preceding peritonitis, and stated that in most cases examined after death the positive proofs of one or more attacks previous to the fatal one were found. He did not remember ever having seen a case of perityphlitis which did not exhibit the adhesions, discolorations and contractions due to former peritonitis, and he thought it probable that there were but few, if any, cases of foreign bodies entering the vermiform process unless the latter had previously lost its elasticity and contractility by an inflammatory change.

Alterations of the mucous membrane of the intestine, he went on to say, constituted the initial stages of local peritonitis in many instances, and of general peritonitis in some. It was not only the *intima* and the submucous tissue which suffered, but the muscular layer was also implicated in the morbid process. No morbid process could remain isolated in a locality supplied with an active blood and lymph circulation, and hence a simple intestinal catarrh might grow to be an enteritis, the enteritis a peritonitis. This condition of things was still more frequently observed in cases of intestinal ulceration, both acute and chronic. Even without perforation, an ulceration would lead to peritonitis which was mostly local, but liable to change into an acute attack under favorable circumstances. Where there was an open ulcer, or even one that had cicatrized months or years before, in the stomach or in the intestines (no matter what its nature might be), we frequently found opposite it a local peritonitis. In the peritoneal covering there was a thickening, circumscribed and distinct, which in recent cases was rather soft and accompanied by much vascular injection. In old cases the original cell proliferation had undergone organization and hardening, and the thickened spot was gray, or whitish and hard. It had lost its elasticity, and was very apt to burst under a moderate amount of pressure; thus leading to perforation. In the midst of apparent health intestinal perforation would often set in, and death ensue within a day; and at the autopsy the physician would learn that the patient was the victim of the perforation of the cicatrix of a typhoid ulceration perhaps contracted a dozen years before.

The diagnosis of chronic peritonitis, he said, was frequently missed. Unsuspected adhesions often existed around tumors, movable kidneys became fixed, intestines glued together, all with-

out recognizable symptoms. In chronic peritonitis respiration was not necessarily accelerated; and especially was this symptom lacking in pelvic peritonitis, perimetritis and pericystitis. There might be occasional vomiting, particularly when there happened to be an intercurrent acute catarrh; but there were other conditions, as, for instance, renal and biliary colic, which were more likely to exhibit this symptom, and to an excessive degree. It was often entirely absent, and even in many acute cases of peritonitis this was the case. Constipation was frequent, but diarrhœa, on the other hand, was not unusual. The horizontal position was often uncomfortable, but a common colic, depending on gas not absorbed or expelled, also caused drawing up of the knees. When the horizontal posture was shunned in chronic peritonitis, however, the patient was more apt to remain quiet with raised knees than one who was suffering from flatulency; in which condition the limbs were generally tossed about continually.

While the abdomen was apt to be tumid, it was to be remembered that general adiposity is most fully developed in this region, that women who have borne children are apt to have a large and prominent abdomen, that the abdomen of a healthy infant is so large as to measure one-third of its length, that a simple hysterical dilatation and inflation may simulate the tumefaction resulting from peritonitis, and that there may occur a local dilatation of the intestine from habitual constipation only. Moreover, in hysteria there was sometimes met with an œdematous swelling of both hypogastric regions; which would still more seriously complicate the diagnosis. The surface of the abdomen exhibited networks of dilated veins more frequently in peritonitis than in any other condition except certain hepatic diseases. Inspection might also reveal solitary convolutions rising above the surface, and palpation and percussion might lead to the discovery of exudations of various sizes and shapes; these consisting of either organized material, thickened omentum, or intestines glued together. Fluctuation would show the presence of fluid more readily than percussion, which might fail in this, that there might be adhesions between the parietal peritoneum and intestines in the flanks. The gas contained in the adherent bowel might yield a tympanitic percussion note although the region might be filled with fluid. A change of position, from one side to the other, or from the horizontal to the vertical posture, or *vice versa*, might contribute to dispel the doubt.

A chronic peritonitis was sometimes diagnosed in the following manner: The patient lies on his back, with the extremities now extended and now flexed. Pressure is tried: hard or light, sudden or gradual, superficial or deep. According to the seat of the pain experienced, inflammation or adhesion is most manifest. When deep

pressure is first made with the palm or finger there may perhaps be no pain. Relieve the pressure suddenly, and a local, very distinct, and circumscribed pain may be felt. Repetition of the experiment will always give the same result; the symptom being elicited by the sudden change in the relative position of the bowels. Not only pain, but the presence of hard, floating exudations can be distinguished by this and similar manœuvres.

Pain of varying degree and persistency, he continued, was a very frequent symptom in chronic peritonitis. Its intensity often depended on the degree of irritation or congestion present, and acute attacks were frequent where there was a cause for exacerbations. Extensive peritonitis in the pelvis might not give rise to pain, except such as resulted from defecation, sexual intercourse, or micturition. In some cases the pain of chronic peritonitis could not be distinguished from the enteralgia produced by other causes, such as abnormal contents, fermentation, and flatulency. Indeed, the anatomical causes of chronic peritonitis gave rise to these very conditions; for by it the intestinal movements were retarded, and from it there might result stenosis and adhesions, interfering with every function.

The results of chronic peritonitis were very various. A simple attack of acute exudation might shape the future of the patient, and the histories of previous acute attacks were often not remembered. Experience showed that the most extensive changes might occur without any known history whatever.

The concluding portion of the paper was devoted to an exhaustive consideration of the important form of chronic peritonitis known as *tabes mesenterica*. The different manifestations in different cases of this affection Dr. Jacobi thought went to prove that there were several distinct varieties of *tabes*, depending on different causes and attended with varying anatomical alterations. Besides the simple secondary hyperplasia of the mesenteric glands, resulting in obstruction, and the tubercular infiltration terminating in the severe disturbance of function, he said there was a third condition which led to symptoms constituting what is known as *tabes mesenterica*, viz.: chronic tubercular peritonitis. The diagnosis of tubercular peritonitis was apt to be quite difficult, and there were many chronic cases which could not be differentiated from non-infectious peritonitis and simple inflammatory processes. There were, however, cases of tumid abdomen with atrophy, of both an acute and chronic character, in which the nature of the affection could be made out with some degree of certainty. The prognosis of so called *tabes mesenterica* was always uncertain except in the very worst cases. It was absolutely fatal when there was peritoneal and glandular tuberculosis complicated with or de-

pending on generalized tuberculosis. In cases where the diagnosis of a non-infectious hyperplasia of the mesenteric glands could be made out, it was decidedly more favorable. When the diagnosis of chronic peritoneal tuberculosis had been made, the case was less promising; still the possibility of recovery, or partial recovery, was not excluded.

In the discussion on the paper Dr. Francis Delafield said that there were few morbid conditions of greater clinical interest than chronic peritonitis, as it was constantly coming up for diagnosis, and as many mistakes regarding it were made as about any affection with which he was acquainted. He had been accustomed to look at the disease with reference to the anatomical conditions present, and hence divided the cases into three classes: *first*, those in which there were simply adhesions of connective tissue; *second*, those in which there were present both adhesions and fluid, either serous or purulent; and *third*, those in which there was diffuse thickening with fluid, but without adhesions.

In the first class of cases the condition was often not recognized until it was revealed by an autopsy. The symptoms often corresponded very nearly with those met with in what is known as "irritable colon," and it was very difficult to distinguish between the two. In many cases it was also difficult to distinguish it from tubercular peritonitis, when, in addition to connective tissue adhesions, there was present a large waxy liver. Still another condition with which it was likely to be confounded was a dilated pylorus, in which the stomach felt to the touch almost precisely like a mass of intestines matted together. Pain in different parts of the abdominal cavity gave the physician as much trouble in the way of making a diagnosis, and there was, in fact, very little to distinguish the pains due to different causes from each other.

In the second class of cases it was often difficult to distinguish the condition from tubercular peritonitis, and the diagnosis between it and carcinoma was also difficult. Again, we were likely to be puzzled by the shape which the peritonitis took. In certain instances fluid was met with in different parts separated by partitions, and there were the physical signs of a tumor with fluid. What seemed like a tumor, however, was simply the intestines matted together.

In the third class of cases it was difficult to distinguish the affection from tuberculous peritonitis, from multiple cancer, and from cirrhosis of the liver. Especially was it hard to distinguish it from the latter when the capsule of the liver was involved, since we were apt to have the gastric symptoms and the vomiting of blood which are so often met with in that affection.

Dr. Wm. H. Thomson called attention to a feature which appeared to be diagnostic of cancerous peritonitis, viz.: a remarkably low per-

centage of urea in the urine (a condition not found in tuberculous or other forms of peritonitis), and related two cases in which he had found it present. He had also found in such cases a diagnostic sign which Germain Sée had called attention to in cancer of the stomach, viz.: tenderness and enlargement of the post-clavicular glands. Again, in cancerous peritonitis there were not the same fluctuations in temperature that were met with in the tubercular form. As to tubercular peritonitis, he had met with one case in a young man in which there was distinct redness about the umbilicus, a sign of this affection which Wilks had pointed out. When ascites was present in chronic peritonitis it rendered it very difficult to distinguish between this condition and cirrhosis of the liver, and especially where the history pointed to perihepatitis. The previous history of the patient, as to habits, etc., however, would generally throw some light on the question whether in any given case we had to do with cirrhosis or not.

Dr. L. Weber said that he had never seen a case of chronic peritonitis, properly so called, which was not infectious in its nature. Such cases as those described in the early part of the paper he would look upon as ones in which there had previously been acute peritonitis, with its accustomed results. Of these, adhesions were the most frequent, and they often had the effect of impeding the functions. He had no objection to calling such cases chronic peritonitis, although personally he did not consider them as true instances of general chronic peritonitis. They simply exhibited the results of adhesions caused by the acute disease, and when in such cases a fatal result occurred the patient really died of acute peritonitis due to perforation. As to *tabes mesenterica*, he believed that this was always a tuberculous affection, and he incidentally remarked that he had been much impressed by the reports of the favorable results which had recently been obtained in this disease by opening the abdomen and dusting the affected parts with iodoform.

P. B. P.

MISCELLANY.

OHIO STATE SANITARY ASSOCIATION.—We have received from Dr. R. Harvey Reed, the energetic Secretary of this Association, a programme of the seventh annual meeting, to be held in Dayton, O., on the 21st and 22d inst. The following papers will be read:

"The Relations of Theologians to Sanitarians," Dr. D. J. Snyder, Scio; "Sanitation vs. Medication," Dr. S. P. Bishop, Delta; "Recent Advances in Etiological Science," Dr. E. R. Eggleston, Mt. Vernon; "Sanitation in Small Villages," Dr. Austin Hutt, Waverly; "Bodily Comfort as a Sanitary Object," Dr. G. C. Ashmun, Cleveland; "Influence of Climate Upon So-called Malarial Fevers," Dr. Wm. Owens, Cincinnati; "The Cadaveric and Vital Alkaloids," Prof. C. C. Howard, Columbus; "Will

General Sanitation Ever Become Popular?" Dr. John McCurdy, Youngstown; "Address of Welcome," Hon. A. D. Witt; "Response to the Address of Welcome;" Dr. R. Harvey Reed, Mansfield; Poem, "Bacteria, or the Flies we Feed on and the Bugs that Kill Us," Dr. W. S. Battles, Shreve; President's address—1. "The use of Pork; its relations to Scrofula and Consumption." 2. "Mosaic prohibition of Pork, as taught by the Scriptures, and the prejudices of most of the Ancient Nations to its use as food." 3. "Description of Trichina-Spiralis and their dangerous effect on the human body," Dr. D. H. Beckwith, Cleveland; "Food as a Therapeutic Agent," Dr. H. J. Herrick, Cleveland; "The Best Food for Man," Dr. J. D. Buck, Cincinnati; "The Relation of Water Supply to Disease," Dr. H. J. Sharp, London; "The Necessity of Uniform Rules, Regulations, Reports and Records of Local Boards of Health," Dr. F. Gunsaulis, Columbus; "The Sanitary Teachings of the Bible," Prof. E. T. Nelson, Delaware; "The Hygiene of the Chronic Insane," Dr. J. W. Scott, Cleveland; "Garbage and Night Soil Crematories From a Financial and Practical Standpoint," Dr. Geo. I. Garrison, Wheeling, W. Va.

Arrangements have been made for reduced railroad rates on the certificate plan, full particulars of which may be learned on application to the Secretary at Mansfield, Ohio.

LETTERS RECEIVED.

Dr. R. C. Van Wyck, Hopewell Junction, N. Y.; Dr. D. W. Jones, Portsmouth, N. H.; *Gazette de Gynécologie*, Paris, France; Medical and Surgical Sanitarium, Battle Creek, Mich.; J. H. Chambers & Co., St. Louis, Mo.; Dr. George S. Sabin, Black River, N. Y.; Dr. J. W. Nelson, Winnetka, Ill.; Dr. Charles Smart, Washington; Dr. John O. Rohé, Rochester, N. Y.; Dr. Charles C. Hunt, Dixon, Ill.; Health Restorative Co., New York; The Maltine Manufacturing Co., New York; Theodore Metcalf & Co., Boston; Dr. P. B. Porter, New York; George T. Nicholson, Topeka, Kan.; J. H. Bates, New York; Dr. A. L. Hummel, Philadelphia; Dr. Dudley P. Allen, Cleveland, O.; Geo. P. Rowell & Co., Philadelphia; Dr. F. A. Weir, Jesup, Ia.; Dr. Wm. G. Gibson, Saranac Lake, N. Y.; Dr. Thos. S. K. Morton, Philadelphia; Philadelphia Polyclinic; Dr. I. E. Atkinson, Baltimore, Md.; Jefferson Medical College, Philadelphia; Dr. F. B. Hemenway, Kalamazoo, Mich.; Dr. J. R. Autrey, Columbus, Ark.; Frank Kiernan & Co., New York; Gladstone Lamp Co., New York; Dr. Bransford Lewis, St. Louis, Mo.; Dr. Léon Leibowitz, Vienna, Austria; Ward Bros., Jacksonville, Ill.; Dr. Henry O. Marcy, Boston; Dr. Henry D. Fry, Washington; Dr. J. W. Park, Berlin, Germany; R. A. Robinson & Co., Louisville, Ky.; Longmans, Green & Co., New York; Dr. F. F. Loury, Chester, Pa.; Lea Bros. & Co., Philadelphia; Publishers Commercial Union, Chicago; Provident Chemical Works, St. Louis, Mo.; S. R. Niles, Boston; Dr. T. J. Turpin, Tallulah, La.; Dr. C. B. Powell, Albion, Ia.; Dr. W. H. De Long, Euporium, Pa.; Oneita Springs Co., Utica, N. Y.; Dr. J. H. Lyon, Roslyn, Wash.; Dr. H. J. Smith, Blackshear, Ga.; Dr. Geo. T. Welsh, Keyport, N. J.; Dr. W. N. Yates, Fayetteville, Ark.; Reed & Carrick, New York; Dr. W. F. Grinstead, London, Eng.; T. W. Haight, Waukesha, Wis.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from October 19, 1889, to October 25, 1889.

So much of par. 2, S. O. 241, October 16, 1889, from this office, as directs Capt. Louis Brechemin, Asst. Surgeon, to report for duty at Ft. Apache, Ariz. Ter., is revoked. He will report in person to the commanding officer, Presidio of San Francisco, Cal., for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889. Capt. Peter R. Egan, Asst. Surgeon U. S. Army, on being

relieved from duty at Camp Eagle Pass, Texas, will report in person to the commanding officer, Ft. McIntosh, Tex., for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Capt. William J. Wakeman, Asst. Surgeon U. S. A., relieved from duty at Ft. Walla Walla, W. T., and will report in person to the commanding officer, Ft. Bidwell, Cal., for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Capt. William B. Davis, Asst. Surgeon U. S. A., relieved from further duty at Ft. Porter, N. Y., and will report in person, upon expiration of his present sick leave of absence, to the commanding officer, Ft. Preble, Maine, for duty. S. O. 248, A. G. O., October 24, 1889.

First Lieut. Paul Clendenin, Asst. Surgeon U. S. A., relieved from duty at Ft. McIntosh, Tex., and will report in person to the commanding officer, Camp Eagle Pass, Tex., for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Capt. Alonzo R. Chapin, Asst. Surgeon U. S. A., relieved from duty at Newport Bks., Ky., and will report in person to the commanding officer, Ft. Yates, Dak., for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

First Lieut. Henry I. Raymond, Asst. Surgeon U. S. A., upon being relieved from duty at Ft. Bidwell, Cal., will report in person to the commanding officer, Newport Bks., Ky., for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Capt. William C. Shannon, Asst. Surgeon U. S. A., relieved from duty at Ft. Yates, Dak., and will report in person to the commanding officer, Ft. Apache, Ariz. Ter., for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Asst. Surgeon Marcus E. Taylor, U. S. A., relieved from duty at Ft. Stanton, N. M., and ordered to Boise Bks., Idaho. Par. 10, S. O. 242, A. G. O., October 17, 1889. Surgeon Joseph R. Gibson, U. S. A., relieved from duty at Ft. Sheridan, Ill., and ordered to Governor's Island, New York Harbor. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Asst. Surgeon Louis M. Maus, U. S. A., relieved from duty at Ft. Porter, N. Y., and ordered to Ft. Stanton, N. M. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Asst. Surgeon Edwin F. Gardner, U. S. A., relieved from duty at Ft. Lewis, Col., and ordered to Ft. Porter, N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Surgeon Clarence Ewen, U. S. A., relieved from duty at Madison Bks., N. Y., and ordered to Willet's Point, N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Surgeon Alfred C. Girard, U. S. A., relieved from duty at Boise Bks., Idaho, and ordered to Ft. Niagara, N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Asst. Surgeon John D. Hall, U. S. A., relieved from duty at Ft. Niagara, N. Y., and ordered to Madison Bks., N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889.

First Lieut. William P. Kendall, Asst. Surgeon U. S. A., leave of absence extended one month. Par. 6, S. O. 244, A. G. O., October 19, 1889.

Capt. Edgar A. Mearns, Asst. Surgeon U. S. A., granted leave of absence for two months. Par. 5, S. O. 244, A. G. O., October 19, 1889.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Two Weeks Ending October 19, 1889.

Surgeon John Vansant, granted leave of absence for fifteen days. October 16, 1889.

Surgeon C. B. Goldsborough, leave of absence extended thirty days on surgeon's certificate of disability. October 18, 1889.

Asst. Surgeon T. B. Perry, ordered to temporary duty at San Francisco, Cal. October 15, 1889.

Asst. Surgeon G. T. Vaughan, when relieved, to proceed to Evansville, Ind., for temporary duty. October 9, 1889.

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No. 19.

ORIGINAL ARTICLES.

THE APPLICATION OF FORCEPS TO TRANSVERSE AND OBLIQUE POSI- TIONS OF THE HEAD. DESCRIP- TION OF A NEW FORCEPS.

*Read in the Section of Obstetrics and Diseases of Women at the For-
tieth Annual Meeting of the American Medical Association,
June, 1889.*

BY HENRY D. FRY, M.D.,
OF WASHINGTON, D. C.

The obstetric forceps is constantly undergoing modifications of construction, and there is no part of the original instrument that has not been, in some manner, altered to suit the ideas of the designer. Blade, shank, lock and handle have been changed in shape and size. Nevertheless, it may be said, but two distinct alterations of the original Chamberlen forceps have been made. They are the pelvic curve of the blade, and the application of axis traction.

Varied as are the designs, the method of employing the forceps is as little fixed as the instrument itself. The application of the blades to the sides of the pelvis, disregarding entirely the position of the head; the application of the blades to the sides of the head whenever practicable; intermittent manual traction; continuous mechanical traction; the advisability or non-advisability of compressing the fetal head; the utility or inutility of lever action, express some of the diverse opinions held on the subject. This lack of uniformity proves the non-existence of a scientific basis. Labor is absolutely a physical act, accomplished according to a well defined mechanism, therefore the laws governing the application of artificial aid should be precise and absolute. With the earnest desire that progress may be made in this direction, I present my communication to the consideration of the members of the Obstetrical and Gynæcological Section of the American Medical Association.

The following propositions are advanced, and suggest for discussion both the methods of employing the forceps, and the modification of its construction.

1. *The forceps should always be applied to the sides of the child's head.*

2. *The obstetrician should not wed any single form or design of instrument, but he should be equally expert with several, and employ one or another according to the circumstances of the case, always selecting that instrument which best enables him to apply the blades to the sides of the head.*

First Proposition. *The forceps should always be applied to the sides of the child's head.* This is styled the French method, because it has been so generally advocated by the obstetric authors of France since the time of Baudelocque. Poullet,¹ of Lyons, in a recent article on this subject states that the doctrine, French in its conception, has unfortunately remained exclusively French, in the sense that it has never been, even partially, adopted by the obstetricians of other nations. In spite of the theoretical efforts of the French masters, the practice has diminished gradually in importance and in frequency of application. In England, Austria and Germany the forceps are always applied symmetrically—one blade to the right, and the other to the left of the pelvis. Poullet further states that even in France the custom is so changed that now the majority of physicians and many specialists operate in like manner. When the head is at the superior strait, he says no one counsels the oblique application of the instrument—an impossibility with the curve of Levret. Under these circumstances, all agree that the head must be seized in whatever manner possible. When, however, it is in the excavation, the classic French authors at least in theory advise oblique application.

In reply to a letter asking for information as to the method generally pursued by the Paris accoucheurs, Dr. Paul Bar kindly writes me:—"When we have to apply the forceps to transverse positions of the vertex, head in excavation or above superior strait, we seek, not to grasp the head from forehead to occiput, but we direct our efforts to apply one blade anteriorly and the other posteriorly."

While it may be that in certain countries the forceps are usually applied to the sides of the mother's pelvis, Poullet undoubtedly errs when he states that the opposite method "has never been, even partially, adopted by the obstetri-

¹ "Nouvelles Archives d'obstétrique et de Gynécologie," Paris, 1887, pp. 44-62.

cians" of those countries. Smellie, one of the earliest English workers in this field, paid strict attention to the situation of the child's ears in relation to the mother's pelvis, and invariably sought to apply the forceps to the sides of the head. Numerous operators, in England and on the Continent, follow the same practice.

In order to ascertain the opinion of the profession in this country, circular letters were addressed to all the teachers of obstetrics, and to numerous practitioners located in every State of the Union. Eighty-two replies were received and the views expressed may be summarized as follows: Forty-two always apply the blades to the sides of the head when possible. Thirty-one always apply the blades to the sides of the mother's pelvis and disregard the position of the head. Nine recognize no rule and apply according to either method.

Various exceptions to these methods were presented.

A number who advocate the first method apply the forceps at the sides of the pelvis when the head is high (transverse or oblique), and after bringing down the presenting part, remove and reapply the instrument to the biparietal diameter of the head. Others, entertaining the same view, attempt to rectify the position of the head, when transverse, before applying the forceps. This is done by external manipulation, by the hand in the vagina, alone, or combined with external manipulation, and with the vectis or forceps.

On the other hand, some of those who follow the principle to adapt the forceps to the sides of the pelvis apply them, under some circumstances, in high situations, to the sides of the head. Several obstetricians employ, in these cases, special forceps with long straight blades.

The advantages of applying the blades to the sides of the head are well known and generally admitted. Reasons exist, however, to prevent the universal adoption of the custom. Its strongest advocates admit it is often impossible to grasp the head in such manner with the instruments now in use. The difficulty arises with high situation of the part when occupying an oblique position, and with transverse positions whether at the brim or in the cavity.

On the other hand some, and among the number many distinguished obstetricians, believe it unnecessary. They claim the application of the instrument to the sides of the pelvis permits the head to rotate within the blades and the normal mechanism of labor is not embarrassed. These operators, we must bear in mind, exercise intelligent supervision, removing and reapplying the instrument when necessary and encouraging the progress of the head according to the natural laws of labor.

By many practitioners the forceps is used without any attempt being made to ascertain the posi-

tion of the head. It is easy to apply the blades to the sides of the mother's pelvis and the head can usually be delivered in that manner. No attention is paid to the laws governing the passage of the passenger, and brute force supplies the scientific employment of artificial aid.

Transverse positions of the head offer special difficulties in the way of applying the blades to its sides. The most aimed at is to locate the instrument in one or other oblique diameter of the pelvis, seizing the head with a blade in front of one ear, and the opposite behind the other ear. The higher the head is situated the greater the difficulty, and when engaged at the brim few attempt to pass the blades in any manner except to the sides of the mother's pelvis. Such a grasp, besides being less secure, exerts injurious compression upon the foetal head. If the forceps be patterned after the Simpson model forward rotation of the occiput may take place within the blades, but if the instrument possess greater compressive power, rotation is hindered and the head is dragged into the pelvis transversely. If, under these circumstances, the forceps be not removed and rotation effected by nature, or artificially with the hand, or with the instrument reapplied to the sides of the head, one of the following results may be anticipated:

1. Continued and forcible extractive efforts may succeed in delivering the head, but it will be born with its occipito-frontal diameter in the transverse of the pelvic outlet, causing, as a rule, laceration of the mother's soft parts, and injurious, if not fatal, compression of the foetal head.

2. Forcible efforts to deliver the head fail, and it becomes obligatory to attempt to push up the presenting part, and if the position cannot be rectified, to deliver by turning, or,

3. Failing to elevate the head, craniotomy is the only alternative.

An important consideration demanding notice, is the comparative frequency of transverse positions of the head. Many obstetric writers claim they are rare; and some of the gentlemen who replied to my circular letters expressed this opinion. My limited experience is opposed to such a view, but I should hesitate to give voice to the contrary were my position not fortified by good authority. During the past six months I have had occasion twice to apply the forceps to the head while transverse in the excavation. Lusk* states that when the head is said to occupy the oblique diameter it is not intended in a mathematical sense. It simply implies it is deflected from the transverse. How easily can one fail to recognize this deflection? Let us remember that the anatomical difference between an oblique and transverse position is limited to a space upon the side of the mother's pelvis scarcely more than one

* "Science and Art of Midwifery," New York: D. Appleton & Co., 1884, foot note p. 164.

inch in extent. One who considers the position rare, is misled by his conviction. Finding the small fontanelle to the mother's right or left side, and the sagittal suture passing across the pelvis, he looks upon it as one of the oblique positions. A more painstaking examination might reveal to him the above suture passing directly parallel to the transverse diameter of the pelvis, and the fontanelle situated at its extremity. A digital examination made while the woman occupies the left lateral posture contributes to an erroneous conclusion. Advantageous as this obstetric position may be for other purposes, it does not compare with the dorsal when our object is to ascertain the relative anatomical positions of the presenting parts of the fœtus and the mother's pelvis. Abdominal palpation gives little aid in arriving at a differential diagnosis between transverse and oblique positions of the head.

In cases of pelvic deformity with contraction of the conjugate of the brim, it is a well established rule that the head occupies the transverse position. Doubtless, minor degrees of pelvic contraction, and disproportionately large foetal heads, exist as causal agents of these positions more often than suspected. The opposite conditions, a roomy pelvis or small head, also tend to produce, and to maintain in the excavation, transverse positions by failure to secure flexion.

In many unrecognized cases of transverse position, rotation relieves the difficulty and labor ends normally. In others, nature fails to correct the position and artificial aid is demanded, consequently the comparative frequency of transverse to oblique positions is greater in forceps cases than in those which terminate without such assistance. Failure to rotate will delay labor indefinitely. Binault³ extracted with forceps a fœtus which was in an advanced state of putrefaction. The mother had been in labor fourteen days, and the head of the child occupied the left occipitotransverse. Four children had previously been born to her with easy labors, so that failure to rotate from a transverse position was the sole cause of delay in this case.

Charpentier and Cazeau describe these positions fully, and give explicit directions for the application of the forceps. Cazeau,⁴ speaking of the comparative frequency of different occipital positions, says that in the results given, "no question seems to be made of the varieties we have designated as the transverse ones, and it is highly probable that they have been approximately added to one of the four preceding groups, for these positions are not very unusual; indeed, I have often met with them myself at the clinique." Transverse positions, he adds, are more common than R. O. A., and left occipitotransverse is

more frequent than right. Mme. Lachapelle⁵ claims that transverse positions are more often met with than R. O. P. Charpentier⁶ writes: "One of the most frequent calls for interference is absence of rotation, the head being often transverse, but usually oblique, since these positions, as we have seen, are the fundamental, the others being simply varieties or consequences." Baudelocque, Moreau and Ramsbotham classify these positions. Although Playfair⁷ follows the majority of British obstetric authors, by describing only the four oblique positions of the head, he says: "Until fairly passed the brim, it more frequently lies in the transverse than has generally been supposed." Poulet,⁸ in his article referred to, mentions the frequent occasions that arise at the Lyons clinique for using forceps in transverse positions. He recognized the absence of flexion in these cases and designed his angular forceps with parallel blades to rectify it. Spiegelberg⁹ makes no distinction between transverse and oblique positions. The first vertex position is described as follows: "The back of the child looks to the mother's left, and the sagittal suture runs in the transverse or oblique diameter." His second vertex position is the reverse. He further says: "Occasionally the head passes transversely through the pelvic canal, and the sagittal suture is at the outlet in the transverse diameter."

"*Deep transverse position of the head.* The delayed rotation around the long foetal axis is due to an absence of resistance to the progress of the fœtus. If the cause lies in the smallness of the head, or in the width of the whole pelvis being occasionally above the normal, the head may also emerge in the same diameter." Again he adds: "Since the accomplishment of rotation sometimes occupies a considerable length of time, the deep transverse position may cause a delay which is not without danger and may require artificial interference. Moreover the skull in the deep position is effected by a marked biparietal obliquity, the anterior parietal bone presents, its eminence appears beneath the pelvic arch, the great and small fontanelles lie far back, and are directed straight to the sides."

Without pursuing this line of investigation further I hope sufficient authority has been presented to support the statement advanced, that transverse positions of the head at the brim and in the excavation are not infrequent. When they persist, artificial aid is called for; moreover the application of forceps to the biparietal diameter when so situated is particularly difficult and more often impossible.

The difficulty is due to lack of a proper instru-

³ Ibid. Phila., 1884, p. 314.

⁶ "Practical Treatise on Obstetrics," Wm. Wood & Co., New York, 1882, Vol. iv, p. 91.

⁷ "Science and Practice of Midwifery," third Amer. edit. H. C. Lea, Philadelphia, 1880, p. 262.

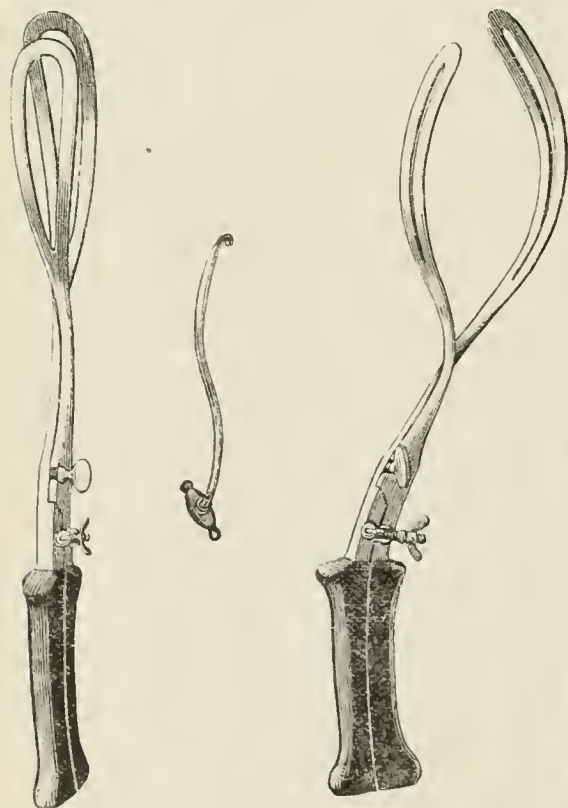
⁸ Ibid.

⁹ "Text Book of Midwifery," Otto Spiegelberg, London, New Lyderham, Society Trans. 1887, Vol. 1, p. 210.

³ Bull. Méd. du Nord, Lille, 1886, 8, vii-ix, 213-220.

⁴ "Theory and Practice of Obstetrics," seventh Amer. edit. P. Blakiston, Son & Co.

ment. Forceps with the usual pelvic curve is valueless. Only when this instrument is applied one blade to each side of the mother's pelvis, and the concave edge directed forwards, is it placed so that the pelvic curve conforms to the axis of the pelvic canal. With the forceps inserted in such manner, however, it is impossible to grasp the head in the biparietal diameter when situated either transversely or obliquely. In proportion as the instrument is turned to one side or the other for the purpose of grasping the sides of the head, the pelvic curve of the blades departs from the line of the pelvic axis and the tip of the anterior blade is projected backwards. Not only is the pelvic curve of the classic forceps of no value in these cases, but it complicates its introduction. It becomes necessary at one time to apply the male blade anteriorly, and at another the female. On this account some obstetricians employ, for high transverse positions of the head, long forceps with straight blades.



Antero-posterior Forceps
(Front view.)

Antero-posterior Forceps.
(Side view.)

To overcome these disadvantages I have designed a forceps curved on the flat. The introduction is simplified because the same blade is always the anterior and the opposite the posterior. The pelvic curve being upon the flat surface, the head can be seized in its biparietal diameter, whether high or low, or whether placed obliquely

or transversely. The curve adopted is the result of experimentation upon fresh foetal heads and articulated female pelvises, and corresponds closely to the pelvic curve on the edge of the classic forceps. The instrument is furnished with a compressive screw for use with the axis-traction attachment, which consists of a steel rod having a handle at one extremity and a hook at the other. The hook fits closely into the fenestrum on the anterior blade and cannot injure the soft parts of the mother. The compressive power of the forceps is about equal to the Hodge, Wallace, and such instruments that are intended for application to the sides of the head.

By seizing the head in its biparietal diameter with the long axis of the blades, parallel to the occipito-mental diameter, we are better able to control flexion and rotation of the head and to deliver by imitating the normal movements of labor. There is also less danger of injuring the child. Lusk¹⁰ states that forceps at the brim is dangerous to the child, "from the rarity of the occasions which permit the blades to be applied to the sides of the head, to which the cephalic curve is alone adapted." This danger is again referred to by Lusk when discussing the paper on "Injury of the Fœtus During Labor,"¹¹ read by Dr. Parvin before the Philadelphia County Medical Society. He points out the danger of destroying the respiratory sense by injury to the medulla when the head is compressed for some time with the blades applied from occiput to forehead. At the same meeting Dr. Goodell directed attention to the risk of destroying the child by pressing the cord between the blade of the forceps and the occipital bone. This accident he was sure had occurred at his hands, and he attributed it, as well as cases of facial paralysis he had repeatedly seen, to the blades of the forceps not being applied exactly to the sides of the head. Dr. Parrish has also reported¹² several cases of still birth evidently due to compression of the cord when coiled around the neck. "Only," he says, "when the instrument is applied to the sides of the head, with the long axis of the blades parallel to the occipito-mental diameter, is the cord safe."

Objection may be made, on theoretical grounds, to the application of forceps with antero-posterior blades to the head when engaged transversely in the contracted brim, for the reason that the instrument encroaches upon the narrow diameter.

¹⁰ "Science and Art of Midwifery," Appleton & Co., New York, 1884; pp. 348.

¹¹ "New York Medical Journal," Vol. xvi, Nos. 22 and 23, pp. 606-634. In this article Dr. Parvin stated that contused wounds usually followed difficult delivery with forceps, and resulted if the blades were applied obliquely or antero-posteriorly to the head. In reply to my circular letters, one operator stated that he had destroyed the sight of an eye by oblique application of the blades to the head when high.

¹² "Journal of the American Medical Association," Vol. xii, No. 18, p. 641.

¹³ "Antero-Posterior Compression Forceps for Application at the Brim of Flat Pelvis," "British Medical Journal," Feb. 2, 1886, p. 220.

On the contrary, this is an advantage, as the ability to compress the biparietal or bitemporal diameter of the head more than compensates for the space occupied by the blades. This view has happily been confirmed by Dr. Sloan, of Glasgow, in a recent communication¹³ to the British Medical Association. The antero-posterior forceps with which he experimented is a powerful compressor, the greatest distance between the blades when closed being $1\frac{1}{2}$ inches. The instrument was designed for application at the brim of flat pelvis, and "is never to be used until craniotomy is the only resource left." Trials were made with fresh foetal heads and dried pelvis, and the action of the forceps compared favorably with that of Simpson's.

Dr. Sloan had five opportunities to test the instrument in cases of obstructed labor, and the results were as follows:

Cases 1 and 2 were unsuccessful and had to be terminated by craniotomy.

Case 3.—Flat pelvis. Simpson's forceps failed; Sloan's antero-posterior forceps applied. Head brought down in fifteen minutes and delivered with straight forceps. Child made feeble efforts to breathe and died.

Case 4.—Flat pelvis, with true conjugate about $3\frac{1}{2}$ inches; Simpson's forceps failed; Sloan's applied and child readily delivered alive.

Case 5.—Flat pelvis, true conjugate $2\frac{3}{4}$ inches; child dead. Simpson's forceps failed; Sloan's completed labor promptly.

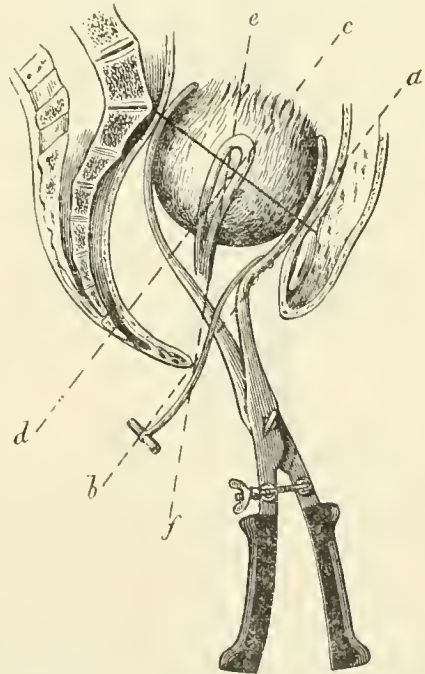
The instrument designed by Dr. Sloan is intended only to compress and bring the head through the contracted brim. To complete labor it is necessary to remove the anterior blade and apply another instrument, or deliver with the posterior blade, combined with supra-pubic pressure.

The use of the instrument which I offer is not restricted to labor in flat pelvis, but to all cases in which, from failure to rotate, the head is situated transversely or obliquely. If necessary, it can be used to compress as well as to make traction or rotate, and delivery can be completed without changing to a different forceps. I have had but one occasion to test the instrument in obstructed labor, and it left nothing to be desired. The woman, a primipara, æt. 15 years, had been in labor thirty-three hours when I saw her. The waters had been evacuated twenty-eight hours, the os dilated and retracted, the head was engaged at the pelvic inlet in the transverse diameter, with occiput to right, the promontory of the sacrum projecting well forwards. The blades were easily applied to the biparietal diameter and the head brought down, rotated and delivered. Moulding and elongation of the head had so diminished the biparietal diameter that very slight compression brought the handles in contact. The woman recovered and was able to be

up on the tenth day: The child, which was at term and weighed $6\frac{1}{2}$ pounds, was born dead. The conjugate diameter measured $2\frac{3}{4}$ inches. This case offered a severe test of the value of the forceps in labor obstructed by diminished conjugate, as the deformity was to the limit at which it is possible to deliver a fully developed child without mutilation. Turning was out of the question, Cæsarean section not justified, and craniotomy the only resort, if forceps failed. The use of the traction rod is designed for application when the head is high. As soon as the part is brought through the inlet the rod can be removed and traction made with the handles. Besides simplicity, it offers these advantages over other axis-traction attachments:

Traction made with the rod approximates the blades and increases the security of the grasp of the instrument.

The amount of compression exerted is, to some extent, in proportion to the force required to deliver the head.

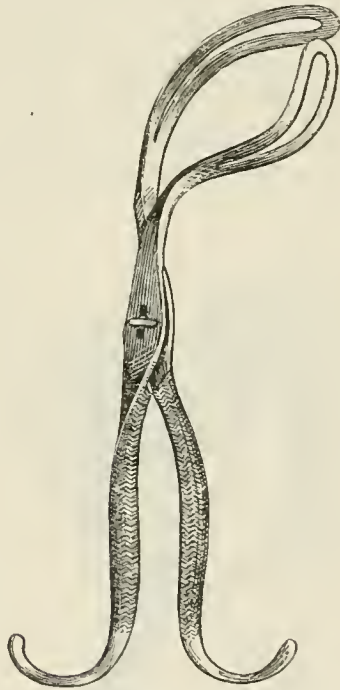


c d, Axis of inlet; a b, line of traction, parallel to axis of inlet; e f, line of traction with blades inserted at sides of pelvis.

The greatest advantage, however, is that the direction of traction can be made more completely in the line of the axis of the brim. With the Tarnier principle it is absolutely necessary to apply the blades laterally; consequently traction is made from the sides of the pelvis. With the antero-posterior forceps the line of traction is downwards and backwards from behind and above the symphysis.

At the time I designed this forceps I thought the idea original, but investigation proved it not

so. Baumers,¹⁴ of Lyons, published in 1849 an article describing a pair of forceps with antero-posterior blades constructed on the same principle. The representations of this forceps depict a very crude instrument having an exaggerated pelvic curve. No effort seems to have been made to modify its construction, although Cazeau found it useful in transverse positions of the head. In such cases, he said,¹⁵ he was "convinced that the biparietal application of the blades, which is impossible with the ordinary forceps, is sometimes easy with that of M. Baumers," and he "thought it right to recommend their application."



Antero-posterior Forceps of Baumers (after Charpentier).

In conclusion I desire briefly to consider the second proposition advanced:

The obstetrician should not wed any single form or design of instrument, but he should be equally expert with several, and employ one or another, according to the circumstances of the case, always selecting that instrument which best enables him to apply the blades to the sides of the head.

In direct opposition to this is the statement of some obstetric writers that one form of instrument should be made to answer for all cases. For instance Playfair¹⁶ says: "It is a decided advantage for the practitioner to habituate himself to the use of one instrument, with the application and

power of which he becomes thoroughly familiar. It is a mere waste of space and money for him to incumber himself with a number of instruments of various shapes and sizes, and he may be sure that a good pair of long forceps, such as Simpson's, will be suitable for every emergency, and in any position of the head (italics my own). Simpson¹⁷ and Leishman¹⁸ give similar advice.

In order to obtain an expression of opinion on the subject from the profession in this country, the following question was embodied in the circular letter sent out:

"Do you habitually employ one variety or make of forceps, or do you make use of several varieties?" The replies were divided in this manner: Thirty employed but one variety of forceps, fifty-three used different varieties, and thirty of the latter recognized the value of axis traction in high operations, and eleven used the short forceps in low operations.

Of the class that use one instrument for all cases the Hodge is the favorite; next in order come the Simpson and Elliott

Of the fifty-three who use different styles of long double curved forceps the Hodge is still the favorite, the Elliott next, and then the Simpson.

Of the thirty who favor axis traction for high operations this peculiarity is noted: Only two use the Hodge for ordinary cases, while the Simpson and Elliott are very popular.

With the desire to formulate special indications for the use of different forceps, the question was asked those who used a variety of styles, under what conditions they employed one or another instrument. Some were guided by no rule, and replied: "If one won't answer, try another;" "use the one that seems to be best suited for the case;" "often change from one kind to another;" and one gentleman uses them "just as he picks them up in his office or residence."

The indications for axis traction and short forceps are fully recognized by those who employ the classic double curved forceps for ordinary cases. The selection of the variety of the latter instrument is guided chiefly by its compressive power. Those who advocate the application of the blades to the sides of the head select usually the Hodge, Wallace or Davis. The followers of the opposite method employ the Simpson or Elliott. Other indications noted were the use of Taylor's narrow-bladed forceps in the class of cases for which it is designed; straight forceps for rotation of low posterior positions, and forceps with long, straight, or nearly straight, blades for application to the sides of the head when high and transverse. By one correspondent the short forceps is employed when the head is at the outlet, to regulate its movements and save the peri-

¹⁴ "Gaz. Med. de Paris," 1849, 3 s. iv, pp. 538-558.

Antero-posterior forceps were also designed by Uytterhoven in 1805. In the discussion of Dr. Sloan's paper Dr. W. L. Reid, of Glasgow, exhibited a pair of antero-posterior forceps which he stated he had used with satisfactory results for seven or eight years.

¹⁵ "System of Midwifery," 3d Am. edit., H. C. Lea, Philadelphia, 1880, p. 468.

¹⁶ Ibid.

¹⁷ Obstetrical Works, Vol. —, p. 442.

¹⁸ "System of Midwifery," 2d Am. edit. H. C. Lea, Philadelphia, 1875, p. 499.

neum. Two distinguished operators state they always apply the blades to the biparietal diameter, when possible, and they use the Davis forceps. When, from any cause, the blades cannot be adjusted to the sides of the head, they are applied at the sides of the pelvis; but under these circumstances both of the gentlemen wisely discard the Davis forceps; one substitutes the Simpson, and the other the Simpson or Tarnier. There were numerous exceptions to the above rules; for instance, one gentleman, emphatic in his expression of the value of applying the blades to the sides of the pelvis, uses a strong French forceps, the tips of which meet, and the greatest distance between the blades is $2\frac{1}{4}$ inches.

The comparative compressive power of different styles of forceps is recognized by a number of operators, who employ one or another under conditions which do or do not require that action. One correspondent states that in ordinary cases, as uterine inertia, he uses the Simpson forceps; in pelvic or cranial disproportion, when some compression is necessary, the Elliot; in greater narrowing, but above the limit where craniotomy is to be considered, the Hodge or Wallace.

Another employs the Simpson forceps in first and second positions of the vertex, the Tarnier in third and fourth, and the short forceps when the head is low.

According to the views here expressed, the only conditions generally recognized for selecting the different varieties of forceps are:

- 1st. The high or low situation of the head, and
- 2d. The compressive power of the instrument.

Accepting the opinion of the majority of replies to the circular letters regarding the advisability of applying the blades to the sides of the head when possible, and recognizing the difficulties in the way of accomplishing it in many cases, a third indication advanced is the oblique and transverse positions of the head, for which, and to overcome the difficulties mentioned, I submit the antero-posterior forceps curved on the flat.

In reply to objections made on the ground that this would unnecessarily complicate the armamentarium of the obstetric operator, I would ask to consider one moment whether it is unnecessary.

Does not the dentist possess a number of forceps, curved on the flat and edge, and in all conceivable angles, and does he not select that instrument which best enables him to seize and extract the tooth? He is guided in the selection of the forceps by the position of the tooth, and chooses the instrument that is curved in proper manner to grasp it most securely. Is the responsibility of the obstetrician less than that of the dentist? Is it not incumbent upon him to ascertain positively, in every case requiring artificial delivery with forceps, the position of the head and to adjust the forceps in such manner that he

can extract it according to the natural mechanism of labor.

With the aid of anæsthesia and the whole hand, if necessary, introduced within the vagina, no excuse exists for failure to clear up any doubt regarding the position.

Let me repeat what is stated in the beginning of this communication: "Labor is absolutely a physical act, accomplished according to a well defined mechanism; therefore, the laws governing the application of artificial aid should be precise and absolute." Only until these laws are established and followed will there exist a uniformity of practice in the use of the forceps.

The advice of eminent obstetricians that one pair of forceps should be made to answer for all operations has had, and still has, its evil influence. In no other operation, and in no other special work, is the operator hampered by such advice.

The surgeon has forceps, scissors, knives and needles curved at different angles on both the flat and edge, and he uses them to the best advantage. Why not tell him to discard all these, as they unnecessarily complicate *his* armamentarium? Tell him that one of each, with a proper curve, will answer for all of his operations, and he should learn to employ it only. I claim it equally unscientific to bind the obstetrician to a single pair of forceps, with which he must accustom himself to do all this class of work; and I repeat, "he should be equally expert with several, and employ one or another, according to the circumstances of the case, always selecting that instrument which best enables him to apply the blades to the sides of the head."

THE CHOICE OF OPERATION FOR STONE IN THE BLADDER.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY A. T. CABOT, A.M., M.D.,
OF BOSTON, MASS.

In order to make the drift of this paper at once clear, I wish to state at the outset the conclusions I have reached by a study of the results of others in stone operations, and from the moderate experience I have had in these cases myself. Unfortunately, residence in a region where stone in the bladder is rather rare has made the accumulation of personal observations slow, but, on the other hand, my association with Dr. Bigelow has given me unusual advantages in getting an understanding of the operation which he devised and christened "litholapaxy," and of which I shall especially speak to-day.

In my opinion, we have in litholapaxy the operation of choice for the removal of most stones. While this is the rule, there are exceptions to it,

and the varying conditions surrounding stone in the bladder, will now and then lead us to choose some other operation for their safest removal. The surgeon who best appreciates these varying conditions, and selects in each case the operation which most surely avoids the dangers surrounding it, will arrive at better results than any advocate of a special operation, however expert.

I realize that some objections have been urged against litholapaxy, and that superior advantages have been claimed for other methods of stone removal. I shall try to fairly consider these objections, and to justly appreciate the strong points of other operations. Before entering seriously upon our subject, I wish to note one of these objections which seems to me to merit no extended consideration, but which has received a certain amount of weight from the unsupported assertions of some of the German surgeons. It has been urged by them that litholapaxy requires a special skill for its performance, and should not, therefore, be commonly employed. Certainly, none but qualified surgeons should undertake any operation for stone in the bladder, and it seems to me that the question to be discussed is, not which operation is safest in the hands of a tyro, but rather this: By what use of the different methods of stone removal can a competent surgeon accomplish the best results? In modern surgery the test of merit is looked for in results. No operation, however brilliant, can claim superiority over rival methods if its death-rate is much higher than theirs. The best operation is the one that saves the most patients, unless some serious interference with bodily function more than counterbalances the gain in safety.

Let us examine the results of the various operations for stone, in respect to their rates of mortality, their interference with bodily function, and the completeness of cure which follows them. We have, in general, three methods of operation to choose among, namely: perineal lithotomy, suprapubic lithotomy, and litholapaxy. Perineal lithotomy may be again subdivided into median and lateral lithotomy. We have here several wholly different methods, each of which has certain advantages over the others and each of which, on the other hand, has its own difficulties and dangers, to be recognized and avoided. The cases for which these operations are to be considered and selected, also differ vastly in their conditions and complicating surroundings, so that it may well be seen that each case should be studied for itself, and the operation chosen which best meets the difficulties and avoids the dangers present in that particular instance.

First, looking at the rates of mortality obtained by these operations, we find at once that we cannot properly compare the results in patients of very different ages. The mortality in children and young adults, after any operation upon the

bladder, is distinctly less than it is in advanced age, and, as we shall see later, there are at different ages changes in the organs concerned which make marked differences in the manner in which the various operative measures are borne. For the sake of convenience in this study, cases may be grouped in three categories:

Children, from birth to 14 years of age.

Adults, from 14 to 50.

Old men, from 50 upwards.

This division of the cases is somewhat arbitrary, but the ages of 14 and 50 are selected as marking, more or less accurately, certain epochs in the development and decay of the genito-urinary organs. At about 14 we look for the changes in the size and sensibility of these organs which accompany the arrival at puberty; and at 50, senile changes in the prostate and bladder begin to make their appearance, which often interfere seriously with the healthy performance of the functions of those parts. In the collection of statistics those tables have been used in which operators have published all of their results, and reports of single cases are not included. This is done to avoid the danger of forming tables of exceptional results; for single cases are more likely to be reported when successful than when they resulted unfavorably. Further, owing to the recent improvements in technique and to the influence which the general adoption of antiseptic measures has had upon surgical diseases, it is evident that the statistics of old times cannot be accepted in settling the present status of these operations; and, therefore, only cases occurring since modern methods came into vogue have been used in this study.

SUPRA-PUBIC LITHOTOMY.

Operator or Reporter.	Children.				Adults.				Old Men.			
	No. of Cases.	Recovered.	Died.	Mortality.	No. of Cases.	Recovered.	Died.	Mortality.	No. of Cases.	Recovered.	Died.	Mortality.
König	24	17	7		1	1			4		4	
Werewkin.	78	76	2		24	24						
Assendelft.					1	1						
Cabot					1	1						
Tremaine	1	1							1	1		
Thompson									6	5	1	
Guyon									8	5	3	
Mikulicz	3	2	1									
Walker	3	3										
Garcia	43	37	6									
Recent foreign	55	42	13									
Recent British	33	33										
Total	240	211	29	12%	27	27	0	0%	19	11	8	42.1%

Garcia, from a collection of 106 cases of all ages, calculates a death-rate of 24.4 per cent. Tuffier, from 120 cases without regard to age, has a death-rate of 27 per cent. Duiles, among 231 adults, finds a mortality of 32.4 per cent., while among 132 children there was a death-rate of 21 per cent.

LITHOLAPAXY.

Operator or Reporter.	Children.				Adults.				Old Men.			
	No. of Cases.	Recovered.	Died.	Mortality.	No. of Cases.	Recovered.	Died.	Mortality.	No. of Cases.	Recovered.	Died.	Mortality.
Freyer.					81	77	4		69	68	1	
Keegan.	114	110	4		10	8	2		11	8	3	
VanderVeer.					15	15			7	7		
Kerr.												
Cabot.					9	6			33	31	2	
Mass. Gen'l Hosp.	1	1			34	32	2		68	57	9	
Total.	115	111	4	3.5%	149	141	8	5.3%	188	173	15	8%

* One from bronchitis and pneumonia.

Guyon had a mortality of 5.2 per cent. in 647 cases of all ages. Usigli calculates a mortality of 4 per cent., while Tuffier places it at only 3 per cent.

PERINEAL LITHOTOMY.

Operator or Reporter.	Children.				Adults.				Old Men.			
	No. of Cases.	Recovered.	Died.	Mortality.	No. of Cases.	Recovered.	Died.	Mortality.	No. of Cases.	Recovered.	Died.	Mortality.
Freyer.	143	143										
Werewkin.	147	138	9									
Cabot.	3	3							1	1		
Mass. Gen'l Hosp.	16	16			2				1			
Carrow.	46	44	2		76	71	5		14	13	1	
Rivington.					1		1		3	3		
Total.	355	344	11	3.1%	79	73	6	7.6%	19	16	3	15.7%

* Seven fistulae.

Freyer gives the following rates of mortality after lateral lithotomy, arranged according to age. They are calculated from 987 cases occurring during the year 1883 in the Northwest provinces of India:

Rate of mortality up to 20 years	5.1 per cent.
" " " from 20 to 40 "	10.7 " "
" " " above 40 "	31.9 " "

Rosenthal, from a collection of 400 cases, deduces the following rates.

Mortality, from 1 to 5 years	3.5 per cent.
" " 6 to 11 "	2.1 " "
" " 12 to 16 "	8.4 " "
" " 17 to 29 "	15.7 " "
" " 30 to 66 "	38.8 " "

These statistics probably give a more accurate rate of mortality for old men than in my table, in which so few cases occur at that time of life.

From these statistics we see that in childhood, judging from the results as to mortality, there is little to choose between lateral lithotomy and litholapaxy. The death-rate in each is but little over 3 per cent. Suprapubic lithotomy is more dangerous, with a death-rate of about 10 per cent. In adult life, the death-rates alter somewhat in favor of litholapaxy. As the prostate and urethra enlarge, and the parts about the neck of the bladder become more vascular, the dangers incident to cutting through them increase. On the

other hand, the increase in the size of the parts makes the performance of litholapaxy comparatively easy and safe. Suprapubic lithotomy keeps its place as a more dangerous operation than either. In old age the rates of mortality are overwhelmingly in favor of litholapaxy. While the dangers attending all the cutting operations have increased very greatly, the mortality after crushing is very little higher than it was earlier in life.

INTERFERENCE WITH THE FUNCTION OF THE PARTS.

It is somewhat exceptional to see a serious loss of function follow any of the operations for the removal of stone. A litholapaxy, carefully performed, should never cause any lasting injury of the genito-urinary organs. The suprapubic incision rarely causes any after-trouble, although occasionally a fistulous opening remains which cannot be closed, and is therefore a constant source of discomfort to the patient. The perineal operations, entering as they do through the neck of the bladder, are much more likely to cause serious trouble. The position of the seminal ducts in the lower part of the prostate, makes their injury by an incision in the floor of the prostatic urethra quite probable. The median operations may sometimes avoid this when the stone is small enough to be removed by stretching the neck of the bladder, but even then lacerations are likely to occur. The lateral incision has the advantage that, while giving more room, it endangers only one of the ducts. The erectile tissue, known as the caput gallinaginis, is also liable to injury, and this may cause sterility. Incontinence is an occasional result of the perineal incisions, owing to their interference with both of the sphincters of the bladder; and fistulae, though rare, do sometimes occur, and may be very persistent and troublesome. Injuries of the rectum during lateral lithotomy are unnecessary and accidental; they still happen often enough in the hands of expert operators, to make it worth while to take the chance of this into account in deciding upon an operation.

COMPLETENESS OF CURE.

It is a not uncommon experience to see a second or a third attack of stone in the same patient. In order to understand how far this reappearance of a calculus is dependent upon the operation by which its predecessor was removed, let us consider the ways in which a recurrence of stone may come about.

1. A uric acid stone may be followed by another, on account of the persistence or reappearance of the uric acid diathesis. The same may be true, though less commonly, in the case of an oxalic stone, and may even occur with a phosphatic stone due to phosphaturia of constitutional origin.

2. The successive escape of several stones from

the kidneys may give rise to several consecutive attacks of stone in the bladder. These stones may be uric, oxalic or phosphatic.

3. A soft, phosphatic stone may be reproduced after removal, if the chronic cystitis and alkaline condition of the urine, which led to its original formation, persists. This is not uncommonly seen in those cases where an obstruction to the complete emptying of the bladder perpetuates the fermentation of the urine.

4. Lastly, if a fragment is left after an operation, it may serve as a nucleus for another stone. The danger of this mischance is greatly increased by any obstruction to the flow of urine, such as is caused by an enlarged prostate. The bladder, in such a case, is often sacculated, so that fragments are more likely to escape removal by the evacuator after litholapaxy, or by the lithotomy scoop and forceps after lithotomy; and if such a fragment be left, it is very unlikely to be voided by the natural efforts of the bladder, but remains in the residual urine. A healthy bladder that completely expels the urine at each act of micturition usually frees itself of such small fragments.

It is plain that recurrences due to the patient's diathesis, in which a new stone forms years after the removal of a former one, cannot be laid at the door of the operation, being as likely to follow one method of removal as another. And the same is true when successive escapes of renal calculi from the kidneys give rise to recurrent attacks of stone. Among my cases, 47 in number, I have seen three instances of the recurrence of uric acid stone due to the patient's diathesis, and have had one case in which calculi of renal origin gave rise to successive attacks of stone in the bladder.

Next, we have the cases in which a recurrence is due to a persistent cystitis with consequent deposition of phosphatic material. I have seen four instances of this sort, all of them occurring in patients with greatly enlarged prostates, and in all of which I was able to satisfy myself conclusively that the recurrence was not due to the retention of fragments. In such cases, the later attacks of stone cannot be ascribed to incompleteness in the operation, but rather to neglect in the after-treatment.

It is obvious that to prevent this sort of recurrence, it is important to entirely relieve the cystitis before allowing the patient to pass from observation, and then to send him away with a clear understanding of the importance of immediately correcting any tendency to alkalinity of the urine or to pus formation. When an obstructed urethra is the cause of the cystitis, the obstruction should be relieved if possible. In case of an enlarged prostate, the evils of retained urine must be lessened as far as possible by systematic catheterization. The moment that any considerable amount of mucus or other evidence of commencing fermentation appears in the urine

of one of these patients, thorough irrigation of the bladder must be instituted and kept up until the normal condition is again reached. If milder measures fail to keep the urine in a fairly good condition, or if the catheter causes pain and has to be used very frequently, a prostatotomy may be called for to correct the obstructing condition. It may sometimes seem well in these cases, if the stone is a small one, to remove it by a perineal incision, for the sake of the opportunity to at the same time operate on the prostate and to drain the bladder. Dr. J. P. Bryson, of St. Louis, has called attention to this occasional advantage of a perineal operation for stone. A surgeon selecting such an operation should, however, bear in mind that the perineal operation is about three times more dangerous to life than litholapaxy, and should balance the hoped-for advantage against this certain risk. In one such case, the writer did a combined litholapaxy and prostatotomy; first crushing and pumping out the stone, and then, through a median incision, dividing the middle lobe of the prostate. The operation was no more severe than a simple prostatotomy, and the power of urination, which had been absolutely lost, was restored to a very considerable extent.

Finally, a stone which has for its nucleus a fragment of an earlier stone is obviously the result of an incomplete operation, and it has been urged against litholapaxy that such recurrences are especially liable to take place after it.

In the early days of this operation such instances of incomplete evacuation were more common than now, and were due to a want of thoroughness in the surgeons rather than to a necessary lack of completeness in the operation itself. To guard against such retention of fragments, many operators now make it a rule to always wash the bladder once or twice with the evacuator some days after the operation, before the patient is discharged. These washings cause but little discomfort, and may usually be done without anesthesia. These washings, if successful in obtaining debris, should be continued at intervals of a few days until fragments are no longer obtained, and in cases of cystitis, where the tendency to the deposition of phosphates is very great, it is a good plan to give an occasional wash with the evacuator up to the time that the urine becomes clear and loses its alkalinity. In using the pump at the time of operation, and in these subsequent washings, the sacculated character of many of these bladders should be borne in mind, and a careful search should be made for fragments which may be caught in pockets. The orifice of the evacuating tube should be turned successively toward each part of the cavity, to dislodge with the current all such fragments, and, lastly, the pouch which so often exists behind the prostate should be searched in this way. For these manoeuvres a straight tube is especially adapted and

should, when possible, be used. With a careful observance of these precautions, I confidently believe that a retention of fragments after litholapaxy need be of no more frequent occurrence than after lithotomy. Indeed, it has happened that fragments left by lithotomy have been subsequently removed by the litholapaxy pump.

SELECTION OF OPERATION.

In Childhood.—As the statistics show, the mortality after any operation for stone in children is small. Lateral lithotomy and litholapaxy are very nearly equal in this regard, and both are decidedly safer than suprapubic lithotomy. The crushing operation has the great advantage that it avoids injury to the seminal ducts and the rectum; also that it does not give rise to fistula or to incontinence of urine; all of which are occasional results of perineal lithotomy. An ample experience has shown that the urethra and bladder of a child will tolerate a considerable amount of instrumentation. It would therefore seem wise to use litholapaxy for all small stones or stones of moderate size (from 1 and $1\frac{1}{2}$ to 2 centimetres in diameter), and for stones larger than this to do lateral lithotomy, except when they are very large ($3\frac{1}{2}$ centimetres and upward in diameter), and then suprapubic cystotomy is to be resorted to.

The ease with which bimanual palpation can be practiced in children, with a finger in the rectum and a hand on the abdomen, makes it possible to judge, pretty closely, the size of the stone, and so to select intelligently the best operation for its removal. The consistency of a stone is also to be taken into account when litholapaxy is thought of, and stones of considerably larger size than is above indicated may properly be crushed if they are soft and friable. The quality of a stone in these regards may usually be determined with some degree of accuracy by the sensation imparted to the sound and by a knowledge of its probable constituents, which can often be gained by an examination of the urine. Phosphatic stones are usually soft, as are also pure uric acid stones. The urates make a rather hard calculus, while an oxalic stone is exceedingly hard and resistant. Certain other conditions which would lead us to employ some other method than litholapaxy will be spoken of in considering operations on adults.

In Adults.—Whether we consider the danger of the various operations for stone in the adult, or the likelihood of disturbance of function following them, we are led to regard litholapaxy as the operation of choice for stone removal. With the efficient lithotrites and evacuator which made "lithotripsy at one sitting" possible, it is now usual to remove stones of considerable size and hardness, and practically it has been found that under ordinary conditions in adults, any stone which is suitable for lateral or other perineal lith-

otomy is suitable for litholapaxy, and that even stones so large that they would require a suprapubic incision if they were removed by the knife, may, when reasonably friable, be safely crushed and pumped out. A number of instances are on record in which stones between 2,000 and 3,000 grains in weight have been successfully removed in this manner.

The exceptional cases in which litholapaxy cannot be used are as follows:

1. A very large and hard stone may resist every attempt at crushing, especially if it is tightly grasped by the spasmodically contracted bladder.

2. A stone may have as a nucleus a foreign body such as a piece of necrosed bone or a bullet, too hard to crush and too large to pass out through a tube.

3. An encysted stone may be out of reach of the lithotrite.

4. Some writers hold that stricture of the urethra may prohibit litholapaxy. This cannot often happen, for strictures, however close, yield readily to division, which may immediately be followed by the crushing and evacuation of the stone. I have so often seen these two operations successfully done together on an etherized patient, that I can but think this the best practice. While it economizes time, it saves the patient much needless manipulation.

5. False passages may exist, which so interfere with the introduction of instruments that the dangers of the operation are greatly enhanced, and the question of lithotomy is to be entertained.

6. The hip may be ankylosed in a position which interferes with the use of urethral instruments.

7. A stone may be so lodged in the entrance to the urethra, that it cannot be pushed back into the bladder where it can be seized by the lithotrite.

In any of these exceptional cases in which litholapaxy cannot be applied, we have to make our choice between a perineal and a suprapubic incision. The danger attaching to the perineal incision is, according to present indications, decidedly less than that after the high operation, so long as it is applied to small or medium-sized stones; but when large stones are dealt with, the facts are reversed, and the perineal operation becomes the more dangerous of the two. Under ordinary circumstances, as has been said, litholapaxy disposes of the stones of a size suited to perineal removal, and these operations through the perineum have therefore fallen largely into disuse for adult cases. They find occasional application in cases of stones of moderate size where false passages, ankylosis of the hip or the presence of a foreign body make litholapaxy impossible. They may also be used rarely when severe obstructive disease of the prostate makes it desirable to combine prostatotomy with the operation for the removal of the stone. A stone impacted in the neck of the bladder, if it

cannot be dislodged, may properly be removed through the perineum.

Suprapubic lithotomy is to be employed in cases where the stone is too hard and large to be crushed, or where an impervious urethra makes the introduction of a lithotrite or staff impossible. In case of an encysted stone the high operation is also the best, as the thorough inspection of the bladder which it makes possible enables us to treat the condition intelligently. Occasionally, cases are met with in which the prostate is so large that the bladder cannot be reached through the perineum, and here, of course, one is driven to do a high operation if a stone exists which it is not possible to crush.

In Old Age.—The same indications are to be followed as in the adult, except that it is to be remembered that perineal incisions are especially dangerous in old men, and not to be undertaken for the removal of stone without urgent reasons. The suprapubic operation will therefore be called upon to deal with most of the stones which are unsuitable for litholapaxy, and even with this incision, a prostatotomy or prostatectomy may be done after the removal of the stone if the conditions require it. As was seen by the statistical tables, it is in old men that the crushing operation has the most unmistakable advantage. The urethra and bladder, in old age, are very tolerant of the use of instruments, so that litholapaxy is ordinarily well borne.

In conclusion, I wish to say a few words about my own experience with stone operations. I have operated forty-seven times, selecting the operation in each case according to the principles I have set forth above. There were forty-two litholapaxies, nine of them in adults and thirty-three in old men; three lateral lithotomies, all in children; one median lithotomy in an old man and one suprapubic lithotomy in an adult.

Of the cases of lateral lithotomy, two were done before it was believed possible to do litholapaxy in children. In the third case there were two stones, one of which was firmly fixed in the prostatic and membranous urethra. The median lithotomy was done for a small stone impacted in the prostatic sinus, and the suprapubic operation was done for a large, hard stone, in a patient having a bad stricture of the urethra with false passages about it. Among these cases there were three deaths; two following litholapaxy and one after median lithotomy. Of the cause of death in these cases I wish to speak briefly.

Case 1 was a broken-down man of 69, for whom litholapaxy was done for a phosphatic stone weighing 98 grs. The operation went smoothly and the relief from it was complete. The urine cleared up and, after a few days, was passed normally without pain or frequency. In short, he made a perfect recovery from the operation. On the fourth day a chronic bronchitis that he had had

before entering the hospital became much aggravated, led to pneumonia and of this he died on the ninth day.

Case 2 was a patient 71 years of age, whom I saw at Bennington, Vt., August 24, 1887, in consultation with Dr. Leroy McLean, of Troy, N. Y., and Dr. Jennings and others of Bennington. He had had trouble with his bladder for three or four years, but had been able to keep about with it till eight days before I saw him, when he had suddenly been seized with an acute exacerbation of cystitis with retention, for which the bladder was aspirated over the pubes. During one of the aspirations the needle touched a stone. When I saw him he was suffering from great pain and frequent painful tenesmus; his pulse was rapid and weak, his countenance sunken. The urine, which had been abundant at first, had almost ceased during the past twenty-four hours. The general feeling at the consultation was that the patient was in a dying condition, and that any operation could only be looked upon as a last effort to give him some more chances of recovery. With this understanding litholapaxy was undertaken. The bladder contained 2 or 3 ozs. of thick, bloody mucus, with almost no urine. The stone was very hard (oxalic), and weighed 1 oz. The operation was a long one. After the stone was out, a catheter was tied in the bladder. There was no reestablishment of the flow of urine and the patient died on the following day.

In the first case death was due to a pneumonia, and the bladder and kidneys were in good order. In this series of forty-two litholapaxies we have, then, but one death due to the condition of the urinary organs, and even that could not fairly be ascribed to the operation. Among the successful cases were several in which there was distinct evidence of an already existing interstitial nephritis, and yet the patients bore the operation well.

Case 3.—The third death occurred also in an old man (over 70 years of age), broken down by hard labor as a missionary in the tropics, who had just recovered from a severe illness on his voyage home. He had a small stone lodged in the prostatic sinus, which caused much pain with frequent micturition. This stone was removed by a median perineal incision and at the same time the third lobe of the prostate was divided with a probe-pointed bistoury. A drainage tube was fastened in. After doing well for a few days he gradually developed a septic condition of the wound which, in his enfeebled condition, proved fatal. This was the only case in the series of forty-seven, in which the fatal issue was distinctly the result of the operation.

SUMMER DIARRHŒA AND DYSENTERY IN CHILDREN.

Read by title in the Section of Diseases of Children at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY N. GUHMAN, M.D.,
OF ST. LOUIS, MO.

Before I commence to read my paper I will ask your patience and indulgence if I wander somewhat from the title. I think the propriety of the digression will be apparent before I conclude.

During the summer months you are all aware of the prevalence of diarrhœa, dysentery and disturbances of the gastro-intestinal canal. I will not take up your time in giving definitions of the terms, or in detailing the pathological and physiological changes which occur in the digestive organs in these diseases, as you will find these stated much better in your text-books than I can describe them to you. What are its causes? Atmospheric changes, heat, rainy and sultry weather, warm during the day and cold at night, impure air and water, insufficient clothing, a badly nourished, fretful and overworked mother or wet-nurse, imprudence on the part of the mother or wet-nurse in the selection of food and drink, over and too frequent feeding of indigestible food, or cooked food which has been kept too long, perhaps in a patent unclean nursing bottle, with a rubber or glass tube attached to it, or which has been kept in an ice-box with various kinds of vegetables, meats, cheese and butter. I suppose most of you have drunk milk or water or eaten butter which had been kept in an ice-box in which strawberries, raspberries or canteloupes had been stored away to be kept cool until used, and no doubt all of you have noticed the effect of placing such articles in the same ice-box. I look upon ice-boxes, in which there are placed all sorts of decomposing and fermenting articles, such as we generally keep for our table use, as breeding boxes of bacteria and microbes and all kinds of germs. Of course I am aware that we cannot have a separate ice-box for each kind of food we eat. Another point to which I desire to call your attention is the use of ice in drinking water. We should not put the ice in the water we drink. It is far preferable and less dangerous to cool the water by keeping it near the ice. You all know that all the ice is not as pure and clean as it should be. Ice-boxes need ventilation and the use of care in selecting the articles which are placed in them as much as our dwellings. These points may be foreign to the title of my paper, but I consider them very important points for us to remember. I have no doubt that bacteria and microbes play an important part in these diseases.

Is dentition of children the only cause of diarrhœa and dysentery during the summer season? I doubt it. During the winter months the mothers come to your office with their babies and say:

"My baby has a cold and the snuffles;" and during the summer, "dentition;" so that in summer they ascribe the trouble of dentition to diarrhœa, and in winter to diseases of the respiratory organs. The question may be asked, may not the irritable and swollen condition of the gums, which we see existing in some children, cause diarrhœa through a reflex action of the nervous system? If you take notice you will see that this condition of the gums occurs only where a child is broken down more or less from diarrhœa and deficient assimilation of food. You do not observe it in healthy children.

What are the varieties, symptoms and character of summer diarrhœas and dysenteries, simple and inflammatory or dysenteric diarrhœa? The above mentioned causes may produce either of these troubles; it all depends on circumstances—in which direction it strikes. It may produce cholera infantum under certain conditions. I think these diseases are closely allied to each other. In the beginning of the attack we first observe vomiting of indigestible food, curdled and cheesy milk. I suppose many of you have seen children vomiting a white coagulated mass of cheesy material, tough like rubber, elongated and moulded by the œsophagus as long and thick as a thumb. It seems to me it would take some time for the formation of such a mass, and much longer to expel it from the stomach. The physician should be very careful not to make a mistake when he is called to a child which is vomiting, or an empty retching symptomatic of, caused by, or a forerunner of cerebro meningitis or other brain lesion, where the former is caused by local irritation and the vomiting is easy, with very little straining, while in the latter the effort of vomiting is preceded by a little hacking cough and retching, with vomiting of a little mucus or a yellowish-green fluid, although you may have the same condition in acute gastritis; during vomiting or immediately afterwards you have an action of the bowels of indigestible food and faecal matter of a more or less thin white, grayish color, curdled and of an acid odor; or the discharges from the bowels may be of a greenish color, intermixed with white lumps, casein; and then at last comes the dysenteric form, tenesmus, with a little mucus and streaks of blood, or a yellowish, slimy mucus, with some faecal matter and blood of an offensive odor. At this point I would draw your attention to cases which may occur in summer as well as in winter, where the child lies on its back, legs drawn up, with a continued straining, and passing nothing but red blood, mixed with a little mucus and no faecal matter, and with scarcely any odor. What might we expect in such a case? Probably an inversion or intussusception of the large or small bowel. It may be near the rectum, or higher up. If it is in the lower part of the bowel, we may be able, by a digital examination,

to feel the inverted bowel in the lower part of the colon; if higher up, we might make our diagnosis with a flexible catheter or bougie, and if we are in doubt about our diagnosis I would give the doubt the benefit.

What would be the treatment in such a case? First elevate the child's pelvis so as to favor gravitation towards the diaphragm and chest, and fill up the bowels with warm starch water, with a long or short flexible tube attached to a fountain syringe, according to the location of the obstruction, whether low or high up, or the inflation of air. If this is not successful I would advise laparotomy, the same as in a grown person. I do not know why the operation should not be performed as well in a child as in an older person, although laparotomy is not often performed in children under such circumstances. We all know that a child in such a condition will die if not relieved, and I do not see why laparotomy is not as justifiable as tracheotomy in obstruction of the larynx.

What treatment should we follow in case of diarrhœa and dysenteric diarrhœa? First remove the cause and make correction in the food and drinks. Do not overload the stomach. Let the child have plenty of fresh air. Medication should be very simple and mild, such as emollients, demulcents, antacids, antiseptics and peptonoids in some form. Be careful of opiates where you have fever or congestion of the conjunctiva, or the least indication of brain lesion. Astringents should hardly ever be used. I never derived any benefit from them, and I have always regretted their use when I employed them. If the fault is in the secretions, small doses of hydrargyrum cum creta or chloridum mite with lactopeptine, which will promote and stimulate the secretions of the digestive organs. If the diarrhœa is of an acid odor, diluted lime water, bicarbonate of soda with the chalk mixture; and if there is any indication for an antiseptic I add some listerine, carbolic acid or creosote. In inflammatory or dysenteric diarrhœa, if the stools are greenish, slimy, mixed with mucus and accompanied or preceded with pain and tenesmus, my favorite remedy is lactopeptine added to a castor oil emulsion, with a little paregoric or McMan's elixir of opium, if not contra-indicated, warm cloths or hop and flaxseed poultices to the abdomen. I always give my little patients enough to drink. I instruct the nurse to get a large piece of ice, wrapped in a blanket, put it in a large dish and keep it in the sick-room, so as not to require them to run up and down stairs to the clean ice-box, which I have described before. I order the medicine, if it is fluid, lime water, some good whisky or brandy, also a soda bottleful of rice, gum arabic and barley water in the dish near the ice, to keep it cool. I always make it a rule, if possible, to look at the stools before I prescribe.

If they come to my office, I require them to bring the last two diapers with them. I prefer to look at them myself, rather than get an imperfect description from the mother or nurse. They will not tell you of the indigestible food, such as potatoes, meat, apples and all kinds of seeds from fruits. They very readily tell you the child is no better, and the medicine did not do any good. Hold up the diaper and ask the mother if she carried out your instructions. Of course she will excuse herself—say that the child picked it up from the table, or got it from its little brothers or sisters.

Gentlemen, you are all aware that we have not so many cases of summer diarrhœas and dysenteries, or any other disease, now as we had in former times. Why? Because the public is better educated in hygienics, they occupy better houses and more room, our cities are better sewered and drained, and sanitation is better in our large cities than elsewhere. There is more cleanliness all around.

Since writing my paper I read the report made by Dr. Henry Tomkins before the British Medical Association in Glasgow, on bacteriological researches in connection with summer diarrhœa, as he had studied it in the town of Leicester, where he resided, and published in the *British Medical Journal*, August 25, 1888. It will be very interesting to all of you and I have no doubt that we will all profit by it, and if the Chairman will allow me to read it I will do so.

"Bacteriological Researches in Connection With Summer Diarrhœa.—Dr. Henry Tomkins brought this matter before the British Medical Association at its recent meeting in Glasgow. He alluded more particularly to the subject as he had studied it in the town of Leicester, where he resided (*British Medical Journal*, August 25, 1888.)

"In approaching the subject two facts were to be borne in mind: (1) That all diarrhœas, not some diarrhœas, were often only a symptom of varied morbid conditions, as pointed out at the Cardiff meeting of the British Medical Association by Dr. Vacher; but, after all due allowance made, there undoubtedly remained a large residue of cases of a specific or special nature, constituting a disease *per se*, as much so as true Asiatic cholera; (2) that that disease was not a disease of infancy or early childhood only, or even for the greater part. Exact observation showed that the bulk of sufferers from it where it prevailed were of more mature years, though, owing to the mortality occurring almost exclusively amongst young children, this fact had often been overlooked. Of all English towns Leicester was, par excellence, the home of this disease, if its mortality was to be taken as a true criterion of its prevalence. During the past three years, since holding the office of Medical Officer of Health there, Dr. Tomkins had paid special attention to the

subject. It was easy to disprove that many of the reputed cases gave no satisfactory explanation of the disease. Many of these affect only the infantile population, and affect these more or less throughout the whole town, whereas the prevalence of the disease was confined to certain well defined low-lying districts of the town and affected all ages and occupations, etc., within those districts. The cause must be something common to every resident within those districts, which something was apparently absent in other parts of the borough. The only things or conditions common to all were food supplies, water and air. The two former were the same throughout the whole town; there remained, therefore, only the air. During the past three years Dr. Tomkins had undertaken a large series of observations on the air, with special reference to the microbic forms of life contained therein. The general result showed that the air of the diarrhoea district of the town contained three to six times as many microorganisms and their germs as the air of the non-affected districts. These microbes (or certain of them) grew in a distinctive manner when artificially cultivated, and were capable of producing diarrhoea; or, perhaps more correctly speaking, the products of their artificial cultivation were capable of producing diarrhoea in the human subject. At present Dr. Tomkins was endeavoring to isolate and single out the particular form or forms which were most concerned in this. The organisms and growths obtained from various tissues, organs and intestines in fatal cases of diarrhoea give like results. A very probable explanation of the undue prevalence of diarrhoea in Leicester, or rather in certain parts of the town, was found in this excess of aerial microbes and germs, and this excess might be satisfactorily accounted for in the following way: Since 1850 (from which date the prevalence of diarrhoea appeared to have commenced and increased) the whole of the area of the "diarrhoea district" of the town had been subjected to a pollution with organic filth, more or less of an excremental character. This, acted upon by the heat of the summer sun, amply sufficed for an enormous production of bacteria. Imperfect and filthy sewers, containing much deposit, in the same way contributed to like results. Meteorological observations during the summer months of 1885, 1886 and 1887 showed that as soon as the earth, at a depth of one foot, reached about 62° F., the disease broke out. At the time of writing (July 23, 1888) this subsoil temperature had not yet been reached, and the outbreak had not yet commenced for this year. In addition to the need for more exact isolation and identification of the "diarrhoea microbe," it was of equal importance to study how this and other bacteria acted in producing disease; whether it was probable by the production of some poisonous material of an alka-

loid character, such as ptomaines or leucomaines. These inquiries were of supreme importance to the physician and clinical observer, as well as hygienist, but could hardly be expected to be carried on by an ordinary health officer, with multifarious routine duties to attend to. Such questions as these required the whole time and attention of specialists."

IS SENN'S GAS TEST INFALLIBLE AND ALWAYS DEVOID OF DANGER? TWO CASES OF SHOT WOUNDS. CONCLUSIONS.

Read before the Mississippi Valley Medical Association, at its meeting at Evansville, Ind., September 11, 1889.

BY H. C. DALTON, M.D.,
SUPERINTENDENT CITY HOSPITAL, ST. LOUIS.

I report to-day one case of laparotomy for shot wound, and another in which an operation ought to have been performed, and would have been, had I not been deterred on account of the failure of the Senn method, being led thereby to believe that the intestines were intact. It is not always pleasant to report our failures, but believing it a duty we owe the profession, in order that our statistics may be reliable, I have made it a rule to report all my failures as well as successes in abdominal surgery.

It is true this course may subject me to criticism owing to some sins of omission or commission, but as criticism will teach me wherein I have erred, I shall still be the gainer. Should the criticism be unjust, I trust it will proceed from him only who has never made a mistake in surgery. This apologetic prelude is written to induce you to "be to my faults a little blind," when you listen to the "o'er true tale" of the two following cases:

Case 1.—B. J., colored, æt. 35, laborer; admitted to the hospital October 25, 1888; was shot at a distance of twelve or fifteen yards three hours before admission, after which he was unable to walk, and soon felt a numb, dead sensation in the right leg, followed by pain in the abdomen.

Examination showed a shot wound an inch and a half above and a little to the right of the anus, the probe passing upwards and inwards through the great sciatic notch into the pelvic cavity. The urine was drawn and found to be clear. There was absence of liver dulness to the extent of two inches above the border of the ribs. The patient was suffering from shock and intense pain in the abdomen, referred to the umbilicus. The extremities were cold, pulse 72 and respiration 39, rectal temperature 96.6° F.

Assisted by Drs. Meisenbach and N. B. Carson, and the hospital staff, I proceeded to make median laparotomy, using Senn's hydrogen gas test

before making the incision. A small hole was made about two inches below the umbilicus, a glass tube was put in and an ineffectual attempt was made to ignite the gas. When the tube was removed the gas escaped through the hole and ignited readily. Upon enlarging the wound the gas escaped with an audible sound. The bullet was found to have entered to the right of, and almost grazing, the iliac vessels. It then entered the cæcum a little to the inner side of the appendix, and passed out an inch and a half above. Twelve holes were closed by the interrupted Lembert suture, iron-dyed silk being used, two in the cæcum (as described above), six in the small intestine, three in the mesentery, and one—the hole of entrance—near the iliac vessels. The bullet was not found, nor were we able to find it post mortem.

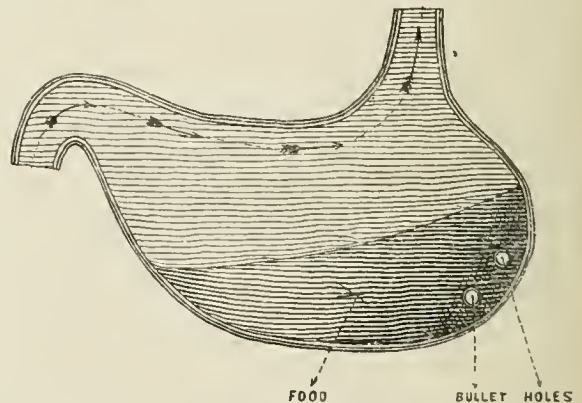
After a thorough peritoneal toilet we attempted to return the enormously gaseous, distended intestines, but found, like Banquo's ghost, that they would not sit down. It seemed our task was like that of Sisyphus, for as fast as we would replace one coil another would "bob up serenely from below," until our patience, as well as our patient, was well nigh exhausted. To make confusion worse confounded, about this time, when we thought our task almost completed, the intestines being nearly all reduced, two or three sutures gave way and the cavity was again flooded with fecal matter. In the attempt to reduce them the intestines were necessarily subjected to rather rough handling and considerable pressure; hence the rupture. The sutures which gave way were those closing two holes which were very close together, and we found it difficult to locate the exact spot from which the feces escaped. We accomplished it, however, by a very simple, but, I think, important method suggested by Dr. Carson, *i. e.*, allowing water from the irrigator to play upon the part while making pressure upon either side of the holes. The escape of the gas elevated the water to perhaps a half inch, indicating the exact site of rupture. An attempt was made to get rid of the gas by washing out the stomach and putting a cylindrical speculum into the rectum to facilitate the escape of the gas, but this much vaunted method failed utterly.

Here was a case where the Senn method not only did no good, but absolutely did a great deal of harm; but more anon. The case also teaches a valuable lesson in that it should caution us, no matter how far away the wound of entrance may be, to look out for abdominal injury if the range of the bullet be in that direction. In a conversation with Dr. Senn, some weeks ago, I informed him of the above facts. He stated that he had also been annoyed by the same thing, but it could be overcome by elevating the hips and using a large funnel-shaped towel to produce compression upon the intestines during their reduction.

I do not believe that it would have worked in this case.

Case 2.—Wong Gau, Chinaman, æt. 25, laundryman, entered the hospital at 7:25 P.M., October 11, 1888. One hour before admission he was shot by a negro at a distance of ten feet, the bullet entering between the fourth and fifth ribs in the left axillary line.

The assistant who examined him (I was absent at the time) probed the wound and concluded that it did not penetrate the abdominal cavity, a very natural mistake, as there were no symptoms pointing in that direction, except that he had vomited several times, the ejecta, however, containing no blood. When I returned to the hospital, three hours after the injury, the pulse had gone up to 100, temperature 100° F., but there was still entire absence of abdominal symptoms. Suspecting, however, from the direction of the bullet, that it had penetrated the cavity, I resected two inches of the seventh rib in order to inspect the diaphragm. A hole was found in the same about three inches from the thoracic wall. Through this hole I placed a glass tube and applied the hydrogen gas test, which gave negative results, although the tube was moved in various directions and removed several times to see if it was unobstructed. The urine was drawn and found to be clear. Having great faith in the gas test I was satisfied that the alimentary canal was intact. My faith has received several rude shocks, and I am no longer an enthusiastic advocate of the measure, except in certain cases. The diaphragmatic and thoracic wounds were closed with heavy chromotized catgut. Patient died twenty-eight hours after the injury.



The above cut shows the relation of the food and bullet holes to the stomach as revealed by the autopsy in Case 2. The arrows show the course the gas would naturally take in passing up the alimentary canal rather than to displace the food sufficiently to gain exit through the bullet holes.

The autopsy revealed two holes in the stomach and a large lacerated wound of the left kidney. The holes were on the greater curvature, three or four inches below the cardia. They were quite close together (half an inch of septum), each

hole being about half an inch in diameter. The stomach was one-third full of semi-solid food, mostly rice, the consistence of which was so firm that it failed to run out when the stomach was elevated, nor did any escape ante-mortem. The food plugging up the holes and overlying them, accounts for the failure of the gas to escape. It naturally sought the higher and unobstructed portion of the stomach, and by its pressure plugged up the holes still more securely.

During anæsthesia the patient came near dying from interference with respiration, due to the great gaseous pressure upon the diaphragm. Had there not been large gaseous eructations, partially relieving the pressure, I believe he would have died upon the table. The case teaches that extreme care should be taken in giving the anæsthetic during the gas test. It also teaches that the test is liable to deceive us at a very important juncture, and that we cannot positively depend upon it in gunshot wounds.

In the above case I might have turned the patient on the right side allowing the food to gravitate to the right, leaving the holes free for the exit of the gas. But who would have suspected such a condition as we found in the case, or would have thought of the necessity of placing the patient in such various positions? It is certainly unusual to have a patient with both stomach and kidney so badly injured without some blood being vomited, or being found in the urine, and this assisted the Senn test to deceive us in the case. I object to the use of the gas test in shot wounds for the following reasons:

1. Because it is misleading, not being *always* reliable.

2. Because even if it give negative results, we should operate anyway, as we are not sure that the intestines are not perforated, and statistics give but poor encouragement to those who adopt the do-nothing plan, the recoveries in such cases being less than 8 per cent.

3. Because even were we positive the intestines were uninjured, there are other organs which are almost equally important, such as the liver, spleen, mesentery, etc., which might require prompt attention.

4. Because I believe there is danger of the gas forcing fæces through the wounds into the peritoneal cavity, thereby adding to the gravity of the case. It is said this does not take place, but I am loath to believe it.

5. Because of the additional danger during anæsthesia from interference with respiration.

6. Because of the liability of the sutured holes to be torn open while handling the intestines, especially during the effort to return them to the peritoneal cavity, as in case 1.

7. Because after their return to the cavity, owing to their distended condition, and the consequent pressure upon the diaphragm, it em-

barrasses respiration, and hence adds to the shock. I believe this to be a valid and most serious objection to its use. He who can put his patient to bed with the least shock, *ceteris paribus*, has the best chance of seeing him recover, for shock is the cause of death in the vast majority of cases; and certainly the liability to death during anæsthesia, while not probable is more likely to occur with the use of the gas than without it, and hence should be taken into account.

Those who have attempted to close the abdomen over intestines distended by gas can fully appreciate my statement. I imagine that a well person with intestines so distended would suffer from colic, and a feeling of oppression consequent upon the great gaseous distention. Why should we add such additional danger to our patient, already in such a perilous condition, when a feather's weight may turn the scale against him? It may be claimed, and I grant it, that the gas soon becomes absorbed, but why subject a patient to an additional risk, even for a short time, at such a critical period? Then too, the preparation and administration of the gas takes up valuable time, it is true not a great deal of time, but when one remembers that the saving of every moment in these cases is vitally important, he naturally is anxious to get through at the earliest moment consistent with the proper management of the case.

Senn reports a case of shot wound of the intestines in which, after sewing up all the holes he could discover, he was enabled by the use of the gas to find another, low down in the rectum, which he could not have found without it. I imagine such cases are very rare, and do not counterbalance the harm which the gas may do in other directions. I would not leave the inference that I have discarded the gas test. I would use it in shot wounds of the back, and low down on the sides of the abdomen, where I could not positively determine whether or not the peritoneal cavity had been penetrated. In other words, where we are in doubt as to the penetration use it, and if we get affirmative results, operate. I think the test is more appropriate to stab wounds, for there we are often very much in doubt as to whether or not the intestines are wounded. When we are so uncertain we should use the gas test; if it give negative results we need not operate, especially as we know that many penetrating stab wounds do not wound the intestines, whereas it is quite the exception—in fact a *very rare* occurrence for a penetrating shot wound to fail to do so.

So I conclude that the fact that a shot wound of the abdomen is penetrating, justifies laparotomy, for, unless the ball be a spent one (a very unlikely occurrence), we can be almost certain that there is serious injury to the viscera. This is a rule to which the exceptions are too few to have any weight.

The gas test then in this class of cases is unnecessary. In penetrating incised wounds, however, the character of the injury is such that the viscera may, and in fact often do, escape.

I believe that this question should be thoroughly discussed, and the truth evolved, not only for the good of our patient, but also for the medico-legal aspect of the case. Self-protection demands that the status of the test be definitely settled. I have not been able to find that any one has controverted Dr. Senn's claim that "rectal insufflation of hydrogen gas is an infallible test in the diagnosis of visceral injury of the gastrointestinal canal in penetrating wounds of the abdomen." My experience will not allow me to subscribe to the statement.

I propound the query "Is the question settled? and answer in the negative, believing it to bestill *sub judice*. What say you after thoroughly weighing the facts in the above cases?"

THE CLINIC.

THE CLINICAL HISTORY OF A CASE OF CYSTITIS FOLLOWING TUBERCULAR KIDNEY, THE CHIEF SYMPTOM OF WHICH WAS CONTRACT- ED BLADDER; TREATED BY HOT WATER DI- LATATION.

BY I. S. STONE, M.D.,
OF LINCOLN, VA.

MEMBER AMERICAN MEDICAL ASSOCIATION, VIRGINIA MEDICAL SOCIETY AND STATE BOARD OF MEDICAL EXAMINERS; SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION; FELLOW OF THE BRITISH GYNECOLOGICAL SOCIETY, ETC.

Miss M., white, æt. 22 years, came under my care in April, 1885. She had for two years had cystitis, for which she had been treated in Washington, D. C. She was somewhat anæmic, although but slightly reduced in flesh. Her family history was exceptionally free from suspicion of tubercular disease, although her father had recently died of supposed carcinoma of the liver and stomach. The patient complained of pain extending along the ureter to the bladder from the right kidney. The pain was not constant, but was increased by pressure over the kidney or by severe exercise, as in riding or jumping, etc. The urine had sp. gr. 1020, reaction neutral, vol. 24 ozs. per diem; was heavily charged with pus to nearly one-third of its vol. Microscopical examination revealed abundant epithelium apparently from the bladder, besides pus corpuscles and abundant amorphous urates. No casts, very slight amount of albumen.

The usual treatment for cystitis gave so little relief that I sought for the cause in the urethra

and found two small papillomata, the removal of which gave some relief. She was passing urine every hour or two and was obliged to continue this through the night, causing loss of sleep and consequently loss of strength. The patient, in September, 1886, passed from my care and entered Columbia Hospital for Women, D. C., where she steadily grew worse and was discharged as incurable in December, after nearly two months' residence therein.

I was again called to see the patient and found her quite wretched and anxious to end her miserable existence. There was constant dribbling of urine, great pain in region of the bladder, extending to both kidneys, although worse on the right side. Her temperature was 102° – 103° , pulse 110 to 120, attended by rigors and other septic symptoms. Her kidneys were not supposed to have to do with her condition; no tumor or other disease having been discovered by those recently in charge of her. Again hoping to benefit the patient by wise counsel, and to satisfy the demands of urgent friends in Philadelphia, she was taken to Jefferson Medical College Hospital and placed under the care of Dr. S. W. Gross, January 15, 1887. His diagnosis was "contracted bladder from cystitis with some pyelitis," which latter he thought needed no special treatment. Accordingly he prescribed hot water irrigation of the bladder, dilatation of the urethra, and argent nitr. sol., xx ad $\bar{3}j$ every five days. During the seven weeks' residence of the patient at the hospital, her bladder increased its capacity for urine from zero to $\bar{3}ij$. The general condition of the patient had greatly improved, and she was greatly encouraged with the prospect of recovery. Dr. Gross failed to detect any tumor or other disease of the kidney—save the pyelitis—and doubted the expediency of any surgical examination.

The patient was again brought under my care in March, 1887, and the treatment instituted by Dr. Gross continued. By increased pressure the bladder reached a capacity of 8 ozs. forced distension, with hot water. At this point, Dr. Gross suggested the stretching cease, but it soon became apparent that contraction would again take place, and the stretching was continued until a capacity of 19 ozs. was reached. This treatment was continued for many weeks and gave the patient great relief from the bladder symptoms. She could retain her urine for eight hours, although generally was called up twice during the night. The quantity of pus in the urine constantly diminished until about $\frac{1}{2}$ by volume remained. Sulphate of morphia gr. $\frac{1}{4}$ with sulph. atropia gr. $\frac{1}{200}$, hypodermatically, were always required to afford relief from pain during the distension. The anodyne was given only once in five days and a gain of from $\bar{3}j$ to $\bar{3}j$ secured at each sitting. This increase in capacity with morphia was sustained by daily irrigation and distension by means of hot

water, temperature 115° to 125° F., until the time would again arrive for the administration of morphia and renewed distension. Hydrochlorate of cocaine was useless in mitigating pain, both from the distension, and that from the silver solution (strong solutions of cocaine, 10 and 20 per cent., were used).

The galvanic current was used daily for six weeks of this period of treatment, but an estimate of its value could not be made, owing to the continuation of other treatment. A ball syringe was used to inject the bladder through a No. 12 soft catheter. Various means were tried to estimate the force required to secure an increased capacity, but all failed; moreover, the syringe gave entire satisfaction. The amount of pain produced by distension with hot water always proved a safe guide, and no bad symptoms followed this treatment, save slight hæmorrhage which invariably ceased when the bladder was allowed to contract. This hæmorrhage always resulted from the distension if any important gain was made in capacity. It would appear that the bladder was contracted in folds which bled when separated. This bleeding ceased when the bladder was fully opened up to 18 or 19 ozs. Iodoform in sterilized muc. acaciæ was used with great benefit, so far as could be estimated by the statement of the patient after the treatment by distension ceased. The iodoform mixture was thrown in the bladder with a syringe on alternate days, and the bladder would retain some portion of this until the next injection.

This case furnishes additional evidence of the amount of speculative knowledge of renal diseases at the present time. Although the pain was not characteristic of either calculus or malignant disease of the kidney, we know that in cases of renal calculus the pain varies greatly in character and intensity. I am fully convinced that all such cases as the one being described should have a surgical exploration made, and would have resorted to it earlier in this one but for the advice of counsel. I was confident that I had discovered a tumor of the right kidney a year before this, but as it did not continue to develop, concluded that it was a temporary distension of the kidney from an obstructed ureter.

The microscope also failed to discover positive renal disease, as shown by Dr. Brown's examination of the sediment August 7, 1887 (Microscopic Laboratory, Detroit, Mich.): "The sediment is composed entirely of urates, pus and epithelium. The kidneys are apparently not at fault."

During the first half of the succeeding year I was abroad and unable to continue the treatment of the case, and she accordingly remained with the nurse who had previously had charge of her, and who continued the dilatations from time to time. On my return she was again brought under my care and I found her retrograding. There was some loss of flesh, and a decided bronzing of the

skin. In September, 1888, during the Congress of Physicians and Surgeons in Washington, I had my friend Dr. Edwin Ricketts, of Cincinnati, see the patient, who fully agreed with me as to the necessity for surgical treatment of the kidney. Accordingly, in November, 1888, I made the usual lumbar oblique incision, and on reaching the kidney found it very hard and firmly adherent to its capsule, so as to render an examination of its pelvis very difficult. A fine needle was thrust in every direction through the mass without finding a stone. The nature of the disease appearing to be malignant, and the adhesions so strong, the wound was closed for prudential reasons. She soon recovered from this examination, and returned to her home with poor prospect for life or health. Intestinal complications occurred in three months and the patient died of inanition in March, four months after the exploratory operation.

Autopsy, twelve hours after death, disclosed healthy left kidney double its normal size. Bowels distended by flatus. Right kidney also double the normal size, densely adherent to everything, including liver, intestines and spinal column, so that a reckless dissection was necessary to obtain a portion of the growth for examination. The remains of the pelvis consisted of a collapsed sac lined with pyogenic membrane, and containing some pus, which could be forced down the remains of the corresponding ureter to the bladder. No cheesy particles could be found in the remains of the kidney, and the appearance strongly indicated sarcoma.

The bladder was similar to those usually found following chronic cystitis, the walls somewhat thickened, but free from any other appearance of disease.

I sent a portion of the growth to my friend Dr. Kemp, of the Hoagland Laboratory, Brooklyn, for examination, whose opinion was that the specimen was indicative of tubercle.

I had frequently examined the urine for tubercle bacilli without result, neither was there cough or other evidences of tubercle elsewhere. My experience in dealing with these cases of chronic cystitis goes to show an invariable causation outside of the bladder. Exclusive of toxicant causes such as the administration of such irritants as cantharides, etc., there appears to be no such disease as acute idiopathic cystitis. Cystitis is therefore remediable so far as the cause is removable. I am quite well satisfied in this opinion after consulting convenient authorities such as Emmet, Thomas, Agnew, W. H. Baker (Vol. ii, Am. Syst. Gynecology), Goodell (new edition), Reginald Harrison ("Surg. Disorders of the Urinary Organs," third edition), etc., also Morris and W. H. Dickinson, London.

It is plainly to be seen that the later writers are acting upon this theory. The length of this report prevents a greater discussion of the sub-

ject, save to say that in the three cases reported by myself¹ cystitis was the chief symptom, and that it was impossible to permanently cure the disease because the kidney was involved. I would also urge early resort to surgical exploration.

MEDICAL PROGRESS.

PTOMAINES AND LEUCOMAINES AND THEIR RELATION TO DISEASE.—DR. JOS. LECONTE contributes to the *Pacific Medical Journal* an interesting article under this caption. He reviews briefly the germ theory of disease together with its recent modifications of interpretation and its outgrowths. With the discovery of toxic germs of diseases, it was at first believed that all the grave symptoms of a germ disease were due *directly* to the presence and multiplication of specific microbes. The first modification of this idea was, that disease in these cases was not due *directly* to the microbes, but to the accumulation in the blood of a poisonous chemical substance, a by-product of microbial multiplication, *id est* the ptomaines which may be regarded as alkaloids of albuminoid decomposition induced by the vital activity of microbes. The writer believes that we are now on the eve of another equally important modification of the original theory growing out of a recognition of the *leucomaines*—the poisonous products of albuminoid decomposition induced by *cell life*. The leucomaines, although formed by normal physiological processes, are highly poisonous, and inimical to health unless speedily eliminated by appropriate organs. If now there should be a failure to eliminate these toxic elements the result would be diseases similar to those produced by disease germs, except that they would lack the property of contagiousness because they are not due to the presence of microbes. The writer suggests that in view of this conception light may be thrown upon the etiology of some of those obscure sporadic and apparently non-contagious forms of fever which often puzzle the physician to classify such as some varieties of typhoid, malarial, typhomalarial, continued fever, and perhaps also a host of other indispositions of less severity. In the elimination of the leucomaines, the writer believes with Schiff, that the liver is the organ chiefly concerned. He believes further that this process is accomplished by the splitting of albuminoids (whether of food or of waste tissue) into glycogen (which is immediately converted into liver sugar and burned) and a nitrogenous incombustible residue which is eliminated by the kidneys as urea. Thus leucomaines (and perhaps ptomaines) are rendered innocuous, and at

the same time utilized as fuel. If these views should prove true we would have ample justification of the time honored practice of clearing the bowels and stimulating the action of the liver in the early stages of various diseases.

THE RELATIONS OF TUBERCLE BACILLI TO THE CELLS.—A. STSCHASTNY reports the results of investigation in this direction made in Dr. Hueppe's Laboratory in Wiesbaden. His material was the spleen and liver of the marmot, the liver of chickens and sparrows and the tuberculous tonsils of man. The results obtained were similar to those of Metschnikoff. He finds that the migratory cells, the blood and lymph channels eat the living and virulent tubercle bacilli; that in their migrations they deposit the bacilli, which they have taken up, in the tissues, and thus prepare the way for the development of genuine tuberculosis or tubercular infiltration. A portion of the leucocytes with their bacilli are converted into epithelioid cells and giant cells containing bacilli. The reporter believes it possible that giant cells also originate in fixed connective tissue cells. The giant cells in animals subject to tuberculosis may suffer a partial or total necrosis. The giant cells of animals not subject to tuberculosis are lasting active structures without apparent phenomena of necrosis, which, just as the physiological giant cells, strengthen the defenses of the organism as the result of a formative irritation.—*Cent. für Klin. Med.*, No. 33, 1889.

STATISTICS OF PASTEUR'S INOCULATIONS.—Pasteur's method of preventive inoculation against rabies has now been employed in 6,870 individuals, some of whom were severely wounded. Proof that the animal inflicting the injury was actually rabid has been furnished in 80 per cent. of the cases, either by experiment or by veterinary examination. The mortality among individuals, bitten by animals which were certainly mad, and treated by inoculation, amounts to 1 per cent., while the mortality of those who were not treated was 15 per cent. The mortality of patients with severe wounds of face and hands was formerly 80 per cent., while in Pasteur's institute it has been reduced to 4 per cent. The English committee appointed to investigate the value of Pasteur's inoculations, reports that Pasteur's method deserves to rank with Jenner's great discovery; the committee consisted of Sir Jas. Paget, Sir Jos. Lister, H. Roscoe and Victor Horsley.

It is interesting to note that so far it has been impossible to demonstrate the virus, much less to isolate it and propagate it in artificial cultures.

SULPHUR AS AN ANTISEPTIC.—SEMMOLA proposes sulphur as the coming antiseptic, most serviceable for use in derangements of the alimentary canal.

¹ See Medical News, June 26, 1886, for the first case.

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SATURDAY, NOVEMBER 9, 1889.

EARLY DIAGNOSIS BETWEEN BENIGN AND MALIGNANT NEOPLASMS OF THE LARYNX.

The editorial assertion of the *British Medical Journal*, that laryngeal neoplasms which originally show no trace of malignancy often assume a malignant character in consequence of the irritation produced by attempts at removal, will be remembered in connection with the case of the late Emperor Frederick the Third. The assertion was apparently based upon the opinion of MR. LENNOX BROWNE advanced to this effect as early as 1875, which position had been accepted as correct by SIR MORELL MACKENZIE and in part, but only in part, substantiated by DR. J. SOLIS-COHEN, inasmuch as he qualified by "occasionally" and "sometimes" in place of "often." "It occasionally occurs that papillomata become transformed into epithelial carcinoma, sometimes from mere local irritation from cough and pressure, and sometimes from irritation set up by repeated unsuccessful attempts at removal by evulsion." Later, Gottstein, Bosworth and Seiler spoke of the possibility of such transformations under traumatic influence, but without specifying intra-laryngeal operations.

The subsequent discussion in the *British Medical Journal*, resulted on the part of Mr. Browne in the substitution of the word "occasionally" for "often" as expressed in his original opinion, and in the inauguration, among all known laryngologists, by DR. FELIX SEMON, on behalf of the *Internationales Centralblatt für Laryngologie, Rhinologie, und verwandte Wissenschaften* of a

"Collective-Inquiry (Sammelforschung) relative to the Transformation of Benign into Malignant Neoplasms of the Larynx in consequence of Intra-Laryngeal Operations."

The final results of the "*Sammelforschung*" will be noticed *in due time*. Just now, it is evident, that to render reliable tabulations thus made special care is requisite regarding the correctness of the original diagnosis—a malignant or a mixed neoplasm, erroneously regarded early in the case as benign, must not be entered up as a transformation. Therefore, as essentially preliminary to the main question and as a subject of importance concerning the treatment of future cases, the *Centralblatt* discusses the early differentiation between benign and malignant neoplasms of the larynx.

With what exultation and pride in the advancement of medical science, as exemplified by the dexterity of the laryngologist and the precision of the microscopist, did we first learn that the German Crown Prince suffered, not from carcinoma, but from simple "pachydermia laryngis;" and with what sense akin to chagrin did it finally dawn upon the profession, that the Prince had escaped the danger and mutilation incident to laryngectomy, only to die; after all, of cancer of the larynx for which the radical operation had been originally proposed.

It now appears that superficial *papillomatous* excrescences are a common and early accompaniment to deep-seated carcinoma of the larynx; or, in other words, a *mischgeschwulst* may easily be present. Evidently, the fault in such cases will be neither in the dexterous extraction of a fragment, nor necessarily in the microscopic examination, but in the assumption that the part represents the whole, and consequently in placing undue reliance upon testimony thus secured.

The inadequate examination of mixed neoplasms has been the occasion of blunders, numerous and deplorable. Even VIRCHOW confesses to such errors in connection with fibromata, and says: "Nothing is more deceptive than the fact that certain parts of a tumor may be formed completely of fibrous tissue while other parts have an entirely different structure, and unless one undertakes a thorough investigation of all parts he is liable to pronounce judgment according to the part only which he has happened to examine. This has occurred to myself and I remember especially such a case, diagnosticated as simple fibro-

ma, in which only after relapse and on reëxamination of the original specimen did I discover in it quite small spots of cancerous structure." Remarks which, of course, are equally applicable—*mutatis mutandis*—to new formations other than fibromata.

KRIEG, of Stuttgart, contributed to the *Sammelforschung*, as a case of transformation from a papilloma, one which he subsequently determined, by examination of additional sections from the original fragment, to be a mixed neoplasm: "In the oldest part there is pronounced pachydermia, *i. e.*, marked proliferation of the epithelial coating with inter-overgrowth (*Hineinwuchern*) of vascular small-cell infiltrated connective tissue papillæ. The connective tissue, beneath the thickened epithelial layer, is thickly beset with epithelial nests situated in the alveoli of the connective tissue. There is present, therefore, at the same time pachydermia and carcinoma."

In a case of known primary carcinomatous infiltration of the right half of the larynx which was accompanied secondarily by superficial papillomatous excrescences, fragments which were twice extracted and microscopically examined exhibited only the structure of papillary fibroma. And to cite still another case from the many, in the *Semonische Fall* the first pieces were microscopically those of a papilloma, while fragments removed only five days later gave unmistakable evidences of epithelioma.

Now we have no desire to dethrone our little God—the microscope, but wish merely to limit his power to his own legitimate field of action. These limitations cannot be better formulated than in the concluding words of the author of the *Sammelforschung*:

"The microscopical examination of fragments removed by intra-laryngeal methods in cases of doubtful laryngeal neoplasms, is a valuable but not infallible aid to clinical diagnosis. It should be used in all cases in which it is possible. This, however, is not always the case, as *e. g.* in submucous infiltrating carcinoma, an intra-laryngeal extraction of fragments cannot always be made. Has such extraction been accomplished, then one should never forget; 1, that the examination need not necessarily yield results characteristic of any particular form of tumor; 2, that, even when the examination presents apparently characteristic results, the possibility of a mixed neoplasm should be remembered; particularly so in cases in which the new formation is *clinically* suspicious while the microscope furnishes apparent evidence of its innocence. . . . The microscopist can give an opinion con-

cerning only the fragment submitted to him, not of the disease itself, unless he discovers in this fragment *positive* indications of malignancy. The examination must not be limited to a single section, but should embrace, in fine sections, the entire fragment submitted, unless the diagnosis of malignancy is with certainty sooner determined. If necessary, the careful removal and microscopic examination of fragments should be several times repeated, unless in the meantime clinical symptoms, which with our present knowledge of symptomatology are irreconcilable with benignity, establish with certainty the malignant character of the neoplasm. In such cases an otherwise indicated radical operation should not be delayed for microscopic confirmation of the diagnosis."

What, then, are the clinical symptoms which will aid so substantially in the diagnosis of certain cases? These have not yet received the detailed consideration which the gravity of the subject demands, but the *Sammelforschung* contains data which materially enrich our literature.

The laryngoscopic aspect of a commencing malignant laryngeal neoplasm is frequently that of a broad-based, semi-globular, or oblong wart. It may be situated at any point but is the more suspicious when, in an elderly individual, it is found upon the posterior third of the vocal cord. The color of this wart varies from white to reddish-gray. The surface, in exceptional cases, may be quite smooth, lending to the tumor of reddish hue the appearance of a fibroma. More frequently it is finely granulated like an ordinary skin-wart, or again, finely branched and villiform so that it is difficult to distinguish from a papilloma.

If benign, the wart would be wholly superficial, but being malignant it is accompanied by a *deep-seated infiltration* which though not itself apparent, yet occasions a relatively greater degree of hoarseness or aphonia, of circumscribed congestion, and later, of impairment of mobility of the vocal cord—the latter symptom being of supreme importance in the differential diagnosis. These, together with an age of over 50 years, the situation of the growth on the posterior third of the vocal cord, and the exclusion of syphilis, tuberculosis, and lupus, render a diagnosis of malignant neoplasm in the early stage, almost a certainty.

TENTH INTERNATIONAL MEDICAL CONGRESS.
—The German Imperial Ministry of the Interior has made a grant of 80,000 marks—\$20,000—towards the expenses of the International Medical Congress, to be held in Berlin in 1890.

A PHYSICIAN'S RESPONSIBILITY IN MEDICATION.

The present area of medical advance is characterized not only by improvements in surgical appliances, but by numberless additions to the armamentarium of the physician. In our eagerness to try the new, it would seem that some of the cardinal points in drug administration are lost sight of, or at least neglected. From a summary made from many thousands of prescriptions, it would seem that physicians generally pay close attention to dosage, and to physiological action of medicaments in the abstract, but give entirely too little attention to the factors which influence the therapeutic physiological action of drug in a given case, namely, the fugaciousness of action, the term of maximum intensity, the rapidity of absorption and elimination, and the fact that drugs act very differently in varying doses.

It has become a routine practice to give quinine in sthenic fevers, three or four grains at a dose three or four times a day, even in the early stages of fever. Quinine has but little influence in lowering the temperature when the curve is upwards. It is only when the wave has reached its height and is turning, that the drug gives a decided answer and carries the ebb far below the point it would have reached unaided. Again quinine inhibits, in some degree, the rise of temperature if a maximum effect of the drug can be obtained before the commencement of said rise. Such being the case, given the temperature record of a patient, it can be seen at a glance when to apply the remedy so as to obtain the greatest effect with the smallest quantity of drug. No general will spread his troop over a wide territory in straggling line, but endeavor, Napoleon fashion, to mass his men and throw their weight upon the weak point. We have not absolute control of disease, but lead our patient's vital forces to battle with it. Our drugs are auxiliaries. In all forms there is usually a morning remission of temperature. The time to give quinine is after the maximum wane at midnight, and before the morning rise. In this way, 10 grains of the drug will accomplish as much as one-third more of the drug given in divided doses through the day.

Bromide of potash is exceedingly slow in its action, attaining a maximum in six hours, and not being all eliminated in twenty-four to thirty-

six hours. Now suppose a patient is taking 20 grains three times a day. By the time the first dose is in full action, a second is ingested, and again a third before the previous doses have been eliminated. Therefore an epileptic taking the above dose continuously has his vaso-motor centres laboring under the impress of not 20-grain doses, but two or three times the quantity.

In contrast, we have nitroglycerin, one of the most fugacious of all the remedies used for continuous action. It attains its maximum in three to ten minutes, and is all eliminated in from thirty to forty minutes. In painful nerve affections, in local congestions and headaches, and in spasm, to obtain a rational effect from it, we must give it not two or three times a day, but almost every hour.

Chloral begins its action fifteen minutes after ingestion, and is mainly eliminated in from two to four hours. When it is desirable to maintain a sedative action over any extended period, either the dose must be repeated or some drug given in combination whose effect is more lasting.

There are many drugs that it would seem best to use in full dose at commencement, and to administer from time to time such increments as will make up the gradual loss by excretion and thus keep the patient under a more or less constant impression of the drug for hours at a time. This, it would seem, is particularly true of opium preparations.

Illustrations might readily be multiplied, but our object is not so much to illustrate as to call attention to the fact, that the smallest part of a physician's responsibility in medication is the abstract dosage—that the question before him is not how much of a drug is needed for a therapeutic response, but how much is needed in the particular case before him to meet all its requirements, and how should it be administered.

THE AMERICAN ACADEMY OF MEDICINE.

As announced elsewhere in this issue of THE JOURNAL, the next annual meeting of the Academy will be held in this city during this month. The aim of the Academy deserves to be better known to the profession. It recognizes the fact that one of the principal objects of the organization of the American Medical Association was to aid in elevating the medical profession of the

United States by every practicable means, and thus securing better care for the public health; and the further fact that the investigations and reports of its committees, especially those on the education—preliminary and medical—of medical men, showed that it had done much to secure the honorable standing of the medical profession in the United States at the close of the first century of American independence, as shown in the general addresses delivered at the Centennial International Medical Congress in 1876. With a desire to supplement the work, so well begun by the American Medical Association, the Academy was organized during that congress with the design of securing the coöperation of those members of the medical profession who themselves had had the advantages of a liberal course of study before entering upon their medical studies. Believing that the advantages which result from the mental discipline gained by pursuing a classical or scientific course of study enables the medical student to prosecute his medical studies more profitably, it encourages the most liberal preparatory training, and advocates ample provision for theoretical and practical instruction by medical colleges. By concentrating its efforts mainly in the direction of securing frequent conference as to the requirements of the age, and the best methods of fitting young men for the study of medicine and the most profitable manner of pursuing their professional studies, it believes that its existence and its efforts serve a useful and an honorable purpose. It is at present engaged upon an important investigation as to the proportion of physicians now in active practice in the United States who have had the benefit of such preliminary training as it advocates. It invites the coöperation of all physicians who not only desire, but who will aid in securing for those entering the medical profession, and who are to fill our places in it in the future, the best equipment for it.

EDITORIAL NOTES.

HOME.

NEW BUILDING FOR THE PHILADELPHIA POLYCLINIC.—The contract for the erection of the new college, hospital, and dispensary building of the Philadelphia Polyclinic and College for Graduates in Medicine, was awarded October 5.

The new structure will rest on a lot 96 feet by

143 feet, about three blocks from the present temporary quarters, and will be of brick, sandstone, and terra-cotta. It will be four stories in height, and will occupy at present only one-half of the lot.

The important features of the building will be the incorporation of the most modern accepted plans in hospital construction.

The system of heating will be by indirect radiation, and the ventilation that of sub-stratum suction. All corners in the building will be rounded to avoid the accumulation of dust. The water-closets and bath-rooms will be in a separate building easily accessible from all parts of the building. The kitchen and laundry will be at the top, separated from the lower floors by an artificial stone floor. The clinic rooms will be on the first floor in direct communication with a spacious waiting-room.

The corner-stone was laid with impressive masonic ceremonies on the 2d inst.

DR. CARL KOELER, the discoverer of cocaine anæsthesia, has been made instructor in Ophthalmology at the New York Polyclinic.

THE AMERICAN ACADEMY OF MEDICINE which meets in Chicago on November 13 and 14, will hold its sessions at the Leland Hotel. Dr. Lester Curtis is Chairman of the Committee of Arrangements. Dr. S. J. Jones is Chairman of the Committee on new members, to whom applications for fellowship in the Academy may be addressed. A cordial invitation is extended by the Academy to physicians to attend its meeting, and especially to those who are interested in a higher standard of qualification for the medical profession, beginning with the preliminary education of students.

FOREIGN.

DR. PHILIPPE RICORD died in Paris, October 21. He was the world renowned syphilographer, and was very often spoken of as the great American physician of Paris. He was born in Baltimore, December 10, 1800. His father was a native of France, and young Ricord went to Paris in 1820, and took his medical degree in 1826. After a few years he settled for life in Paris, and went to the front rank in surgery. He was Court-Surgeon under the third Napoleon, and was the recipient of numerous decorations. Notwithstanding his advanced years, he was until quite recently a prominent character in Parisian medical society.

TOPICS OF THE WEEK.

THE UNITED STATES CENSUS IN ITS RELATIONS TO SANITARIANS.

From a paper presented by DR. JOHN S. BILLINGS at the annual meeting of the American Public Health Association held in Brooklyn October 25, we make the following extract:

Theoretically we all agree that vital statistics are the foundation of public medicine; but practically, the majority of sanitarians and physicians think that they are not essential to the work of a health officer or Board of Health, although they may be desirable. That the main objects in sanitary work are to see that the water supply is pure, that garbage and excreta are promptly removed or destroyed, that no filth is allowed to accumulate in the vicinity of habitations, that contagious diseases be controlled by isolation and disinfection, and that plenty of fresh air be provided in schools, churches, etc., and that all this can and should be done whether death-rates are known or not. Occasionally it is possible to get up a cholera, or yellow fever, or small-pox or typhoid fever scare, and to thus get a little money for sewerage or for street and alley cleaning; but these spasmodic reforms do not last long, and in most cases do not amount to much. You have got to produce constant, undeniable evidence that the work is needed and is useful; evidence that will convince the press and the majority of the community, and this evidence must be mainly death-rates, to which should be added all the sick-rates that can be obtained.

To give these death-rates you must have a complete registration of deaths and a corresponding enumeration of the population, and you ought to have a complete registration of births.

Before this Association meets again the eleventh United States census will be taken, and its methods, its completeness, and the mode in which its results will be tabulated and published, are of great interest and importance to all who are interested in sanitary science or in public health work in this country.

One of the most important questions, then, to be settled before the census is taken, is: What shall be the boundaries of the special districts of the city for which a separate statement of the population is desired?

For about a dozen of our large cities it is proposed to make a systematic division of the area into sanitary districts having special relations to altitude, character of habitation or of population, etc., and to have special death-rates calculated for each of these districts. This is being done in conference with the health authorities of these cities, and it is hoped that in this way some very interesting data will be obtained which will serve as a foundation for sanitary work in the future. Such districting has been arranged for Boston, New York, Brooklyn, Washington, New Orleans and Louisville, and the work is in progress for other cities. In investigating the details of the records of deaths kept in different cities I have noted deficiencies in a few of them to which I wish to call the attention of all who have to do with the registra-

tion of vital statistics. First, all deaths occurring in hospitals should be charged to the ward or district of the city from which the patient was taken to hospital, where this can be ascertained. Otherwise the death-rate in the ward in which the hospital is located will be too high, and in the other districts it will be too low.

Second, the birthplace of the parents of the decedent should be reported. We want to know the race of the decedent—whether he was German, Italian, Irish or American, and to give merely his own birthplace is not sufficient.

Third. It is very desirable that in all cases of deaths of colored persons it should be stated whether the decedent was black or of mixed blood, such as mulatto or quadroon.

One of the most important questions in the vital and social statistics of this country relates to the fertility, longevity and liability to certain diseases of those partly of negro and partly of white blood, and the only way to obtain data on this subject is through the registration of vital statistics.

Under the provisions of the law providing for the census, the living colored population is to be enumerated with distinction as to whether such person is black, mulatto, quadroon or octoroon, and we need the same distinctions for all persons dying during the census year, to enable us to calculate comparative death-rates. Wherever there is a fairly accurate registration of deaths, which now exists in several States, and in over 100 cities, the next census will afford the means of calculating the death-rates, with distinctions of color, sex and age which will furnish important indications for sanitary work.

I have no authority to make specific promises, but I believe that the reports of the next census, in which the members of this Association are specially interested, will be published as soon as it is possible to compile them, and will be distributed to those sanitarians and physicians who need them in their work and who make timely request for them; and thus believing, I do not hesitate to ask the cordial coöperation of all members of this Association to make the data upon which these reports are founded as full and accurate as possible.

CHANGES IN THE GANGLION CELLS AFTER STIMULATION.

The theory has for a long time been held that the change in activity in the central nervous system, that is, the performance of its function by any nerve centre composed of ganglion cells, was accompanied by some physical or chemical change in the cells. This theory has at last received demonstrative evidence in its favor from certain recent investigations. Korybutt-Daszkiewicz¹ has attempted to solve the question whether the activity of the central nervous system is accompanied by changes recognizable with the microscope. His experiments were conducted on two frogs of the same weight and sex. One was kept as a control, in the other the eighth nerve was stimulated by induction shocks for an hour. The cords of both were hardened and stained by Gaule's method with hæmatoxylin, nigrosin, eosin, and safranin.

¹ Archiv. f. mik. Anat., 1889, p. 51.

The nuclei of the ganglion cells were the point of chief interest. These stain red and blue, but he finds that 3.31 to 3.66 times more nuclei stain red in the stimulated frog than in the unstimulated frog. Hodge, who has investigated the same subject, questions the accuracy of this method, thinking that the red nuclei are more superficial than the blue, and that the thinner the section the greater the number of red nuclei. Hodge's method was to stimulate one or more nerves on one side of the body, and then remove the corresponding spinal ganglia on both sides, keeping them together all the time in the hardening and staining fluids, and making simultaneous sections. The treatment is thus absolutely identical, the only difference being that one ganglion has had its nerve stimulated while the other has not. He finds that the stimulated ganglion shows distinct differences; the nuclei in its cells are smaller, the outlines are jagged and irregular instead of round, and there is a loss of open reticular appearance with darker stain. The cell protoplasm shows a slight shrinkage in size, it has a lessened power to stain or to reduce osmic acid, and it becomes finally granular and reticulated. The cell capsule also shows a decrease in the size of its nuclei. These investigations are practically the first undertaken upon this subject, and their importance as confirming the theory of nerve action is great. They indicate, moreover, the importance of applying similar methods in the investigation of so called functional diseases of the nervous system, for they seem likely to render the old distinction between functional and organic disease of no value.—Philip Coombs Knapp, in *Boston Medical and Surgical Journal*.

STEAMSHIP SANITATION.

Among the subjects to be discussed at the meeting of the American Public Health Association at Brooklyn this month (October) is "Steamship Sanitation." The matter is one of considerable importance to the Eastern States, and through them to the whole Union. Owing to the supineness of the Board of Trade and the shortsighted selfishness of the steamship owners, there is a continual danger that whole shipfuls of passengers may be landed at New York, Boston, or any other Eastern port, bearing with them the germs of infection contracted during the Atlantic voyage. The inspection of emigrants at British ports, though carried out, we believe, as a rule, by the medical officers with the most conscientious care which the circumstances permit, is little better than a farce. The emigrants are gathered upon the wharf and at a signal admitted on to a narrow gangway, along which they struggle with their bedding and all the small impedimenta for the voyage. As they issue from the gangway they are hastily inspected, and any case presenting obvious or suspicious symptoms is made to stand aside for more careful examination. Even this rough inspection is better than nothing, and a practised eye will no doubt weed out most of the dangerous cases. If the surgeon of the ship could always ensure the isolation of the suspected cases, a very great step would be taken towards the attainment of the desired end. Unfortunately this is by no means always the case; if the

ship is full, the space set apart for the hospital is very apt to be used by the agents for berthing ordinary passengers. If the surgeon protests, he is snubbed, and if he records the fact in his report, which ought, according to regulations, to be forwarded to the Board of Trade when the vessel returns, he is very likely to have the document returned to him by the agents with the intimation that the matter is one which does not come within his province. It is within the powers of the Board of Trade to compel the steamship companies to obey the law as to the reservation of the ships' hospitals for the use of the sick alone; and it is not easy to understand why frequent and repeated breaches of the law are winked at by the officials.—*The British Medical Journal*.

THE ESSENTIALS OF SUCCESS.

SIR ANDREW CLARK, who has achieved a professional reputation which is world-wide, had occasion, in a recent address, to give his views of what is required to make a man a successful physician. In that address he uses the following language:

Firstly, I believe that every man's success is within himself, and must come out of himself. No true, abiding and just success can come to any man in any other way. Secondly, a man must be seriously in earnest. He must act with singleness of heart and purpose; he must do with all his might and with all his concentration of thought the one thing at the one time which he is called upon to do. And if some of my young friends should say here, "I cannot do that—I cannot love work," then I answer that there is a certain remedy, and it is work. Work in spite of yourself, and make the habit of work, and when the habit of work is formed it will be transfigured into the love of work; and at last you will not only abhor idleness, but you will have no happiness out of the work which then you are constrained from love to do. Thirdly, the man must be charitable, not censorious—self-effacing, not self-seeking; and he must try at once to think and to do the best for his rivals and antagonists that can be done. Fourthly, the man must believe that labor is life, that successful labor is life and gladness, and that successful labor, with high aims and just objects, will bring to him the fullest, truest and happiest life that can be lived upon the earth.

THE LATE DR. JOULE.

DR. JAMES PRESCOTT JOULE, who died at Sale on October 9th, in the 71st year of his age, was one of the most distinguished men of science which this country has ever produced, and is entitled to be reckoned one of the greatest of original workers in pure science. His great achievement was his determination of the mechanical equivalent of heat. The consequences flowing from the working out of this problem, which was achieved by Dr. Joule with the most consummate skill and admirable completeness, are to be noted in almost every department of science; upon his demonstrations the whole theory of the correlation of forces is mainly based. The most important practical applications have been in the mechanical arts, but even physiology is his debtor.

PRACTICAL NOTES.

THE DIGESTIBILITY OF BOILED MILK.

It is now very regularly recognized, both by medical men and by the more highly educated section of the community, that it is a wise precaution to boil both water and milk before using them as beverages, and the practice is becoming very common. The growth of pathogenic organisms in these fluids, especially in milk, is often very rapid, and thus diseases may be transmitted from one place to another. The temperature of boiling water puts an end to the life of the microbes, and also to the danger of infection. Another reason why boiled milk is so much used, especially in infant feeding, is that it is supposed to be more easily digestible than fresh milk. If, however, we can draw correct deductions from dogs to babies, it would now appear that this belief in the superior digestibility of boiled milk is founded on error. Dr. Randnitz, of Prague, has recently published, in Hoppe-Seyler's *Zeitschrift für physiologische Chemie*, certain very striking experiments on this subject. He admit, what anyone may confirm for himself, that milk that has been boiled does not, on cooling and the subsequent addition of rennet, form a large coherent clot, as does fresh milk, but a flocculent precipitate of casein is produced instead. He shows, however, by analysis of the milk itself and of the urine and feces, that much less nitrogenous material is absorbed from milk that has been boiled than from the same milk when fresh. The digestibility of fat is apparently unaltered by boiling; the following figures, however, illustrate the fact just alluded to as to the difference of digestibility of the proteid materials: In three days 15.6 grams of nitrogen were given in the form of fresh milk; of this quantity 13.3 per cent. was found in the feces; the nitrogen of the urine accounted for 77.3 per cent., so that 9.4 per cent. was retained in store by the growing animal. The animal was next fed on boiled milk, and 10.4 grams of nitrogen were given in that form for two days; 18.6 per cent. of this was found in the feces, 75.7 in the urine, so that only 5.7 per cent. was assimilated. The belief in the superior digestibility of boiled milk is, however, so widespread, that we should like to hear of the confirmation of the above remarkable results before we recommend mothers to leave off what is, from other points of view, the very praiseworthy custom of boiling the milk they give to their children.—*British Medical Journal*.

TREATMENT OF DIABETES BY ANTIPYRIN.

DR. JOSEPH S. CARREAU, of New York (*Med. Record*), cites three cases of this disease success-

fully combated by this remedy. He also states the fact that Dujardin-Beaumetz, at a meeting of the Académie de Médecine, April, 1888, praised the happy effects of antipyrin in certain cases of diabetes, especially when the two symptoms, polyuria and nervous irritation, predominated. Henri Huchard, at the Société de Thérapeutique, February, 1888, said that he employed antipyrin in a case of symptomatic polyuria resulting from meningo-myelitis, with good effects. He gave from 4 to 6 grams daily, and the quantity of urine was brought down from thirty-six litres to four. He also reported a case of diabetes, where he noticed, in a few days, the sugar diminish from 735 to 271 grams a day under the use of antipyrin—two to six grams daily. He also said that the prolonged administration of antipyrin, in his own experience, has never been followed by albuminuria.

M. Panas reported two cases to the Académie de Médecine, April, 1889, where great relief followed the administration of antipyrin. A man aged 38, passing 49 grams of sugar in twenty-four hours, by taking 2 or 3 grams daily during six days, had all traces of sugar in his urine removed. A woman, aged 73, by taking 3 grams daily for a few days, also received similar benefit.—*Canada Lancel*.

SALICYLIC ACID IN TYPHOID FEVER.

DR. SCHAKOVSKI (*Thera. Monatsh.*) claims great success from the use of salicylic acid in malignant scarlatina. He has used it in 125 cases. The mortality is but $3\frac{1}{2}$ per cent. The following formula was used:

R Acidi salicylici 1 part.
Aque destillatæ 75 parts.
Syr. aurantii cort 30 parts.

M. Sig. Give a teaspoonful every hour during the day, and every two hours during the night.

The temperature falls very rapidly after taking this mixture, so that in certain cases, inside of forty-eight hours, the temperature has fallen from 105.8° F. to 100.4° F. All trace of fever vanishes by the tenth day. Nevertheless the author advises the continuance of the remedy for some time, in decreasing doses, to prevent a relapse. All serious complications, such as uræmia, anasarca and diphtheria, are avoided through this treatment. The treatment is ineffectual only when employed too late (after the fourth day of the illness), or where grave complications already exist.—*Medical Standard*.

A REMEDY FOR NEURALGIA WITHOUT MORPHINE.

R Antipyrin 3 iij.
Ex. cannabis Ind.
Ex. aconite āā gr. vss.
Caffein 3 ss.
Hyoscine hydrobrom. gr. T.
Divide into 30 capsules.

SOCIETY PROCEEDINGS.

The American Public Health Association.

The American Public Health Association met this year at Brooklyn, N. Y., for its seventeenth annual session. It occupied part of four days, from October 22 to 25. In the number of its attendance and the quality of the scientific results the verdict, on the part of its *habitués*, has been that the meeting was a success. Not much time was allowed to run to waste on outside entertainments; the unwritten law of the Association being distinctly in favor of giving the minimum of time to excursions, collations and the like. Three diversions were permitted at Brooklyn.

The first was the exhibition of sanitary apparatus, food materials and the customary range of inventions promotive of good health, that finds place in this kind of exhibition. This is the first exposition of the sort that has been attempted at any annual session of the Association. It was a modest show, tentative in extent, but sufficiently attractive to make it probable that it will be tried more fully at future meetings, when the local committees shall see fit to give their time to it. The present report is that the exhibition has been self-sustaining; an income having been derived from the rental of floor space to the exhibitors.

The second diversion was a public meeting held at the Academy of Music, on the evening of the first day, in order to extend the freedom of the city to the visitors. At this meeting, which the citizens and especially the medical profession attended *en masse*, addresses of welcome were delivered by the Mayor of the city, Mr. Chapin, Dr. Alexander Hutchins, for the profession, the Rev. Dr. R. S. Storrs and ex-Mayor Seth Low, who has just been elected to the Presidency of Columbia College, in New York City. These are four speakers who, in their respective fields, are held in highest esteem in the community. The address of Dr. Hutchins was, in a marked manner, approved and enjoyed by the medical members present.

The third diversion was an excursion, by steamer, on the afternoon of the second day, to the Quarantine Station on the Lower Bay of New York Harbor. The original plan of this excursion included a visit to the islands in the East River, on which are located the charitable institutions of New York City, but lack of time prevented the carrying out of that part of the programme; the blustering weather, also, was rather adverse to a prolonged sail after visiting the objects of interest in the harbor below. Two hundred and twenty delegates and their friends took the excursion. A collation, given by the citizens of Brooklyn, was served during the sail. The

visit to the quarantine islands was upon the cordial invitation of Dr. William M. Smith, for many years the Health Officer of the Port of New York. Dr. Smith sought this as a favorable opportunity of explaining the *modus operandi* of a modern, non-stringent quarantine, and of making better known to the official members of the Association some of the changes instituted by him in recent years. With the exception of the foregoing, the time of the Association was wholly given to the consideration of scientific business.

The notable papers, prepared for the convention, included one by Dr. John S. Billings, U. S. Army, who took for his subject *The Sanitary Relations of the Federal Census*; one by Dr. George M. Sternberg, also of the Army, who treated of *Yellow Fever and its Etiology*, therewith presenting microphotographic illustrations by means of the stereopticon; one by Mr. Edward Atkinson, of Boston, on *The Economics of Cooking*, made plain by the preparation and service to the audience of a hot supper, cooked in ovens invented by himself, over two oil lamps, while his lecture was in progress; one by Dr. Salmon, of the National Bureau of Animal Industry, who gave an illustrated discourse on *The Texas Cattle Plague*; also a paper by Prof. W. O. Atwater, of Washington, on *The Physiological Chemistry of the Dietaries of various Nations and Occupations*.

The stimulating and instructive nature of many of these addresses, as well as of others on the various problems vexing the medical officer of health, was manifest in that they called forth a volume of debate which was far in excess of the time apportioned to the discussion of papers. If a full week had been the length of session, it would have been none too long to have been occupied by the themes that were ripe for consideration in the minds of the members. The presiding officer had frequently to cut short an interesting subject by reason of the preassignment of the time to other interesting matters.

The Presidential Address of Dr. Hosmer A. Johnson was cordially received by the popular audience to which it was read (see JOURNAL, November 2, 1889).

The Overshadowing of our Homes, by Dr. Thornton Parker, of Newport, was the subject of the first paper of the first day. The contention of this paper was adverse to the large or general employment of shade trees, as exemplified in the towns of New England. Dr. Maxwell, of Florida, and others from the Southern States defended the shade tree.

Infant Mortality occupied the afternoon session of the first day very fully. Papers of exceptional value were presented by Dr. Jerome Walker, of Brooklyn, and Alfred White, Esq., also of Brooklyn; the latter giving the results of a large experience in the construction of improved tenement houses. Dr. George Homan, of St. Louis,

offered some suggestions regarding the compensation due to health officials.

On the second day, Dr. Billings gave an outline of the proposed studies in vital statistics to be carried out under the coming census, inclusive of new features to be introduced in regard to the sanitary districting of ten or more of the larger cities. His propositions elicited much discussion. Dr. J. N. McCormack, of Kentucky, in this connection, introduced a resolution instructing that an effort be made to establish cordial relations with Cuba and Mexico, in respect of the sanitary departments and undertakings of those countries. Later this was adopted by the Executive Committee.

Dr. Ezra M. Hunt, of New Jersey, took up the subject of *Phthisis Prevention and the Methods, indicated by the latest Researches, to be employed to that End*. The discussion of this subject was deferred until the following day, when it was opened by Dr. J. S. Billings, who inclined to limit the preventive official measures to precautions against the aerial diffusion of dried phthical sputa.

Dr. Gihon, of the U. S. Navy, introduced a resolution declaring the sentiment of the Association to be favorable to the adoption of preventive means, as to the disease in question, so far as to recommend the destruction of the tuberculous sputa.

The further discussion of the prevention of tuberculosis was taken up on the afternoon of the third day, the papers introductory thereto being presented by Dr. Edward Playter, of Canada, and Dr. P. H. Kretschmar, of Brooklyn. The latter speaker defended the doctrine of the heredity of phthisis pulmonalis and laid down the following propositions:

First. If there are many children in a family, those born after the sixth or after the seventh are apt to develop pulmonary consumption.

Second. If the children in a large family are born at short intervals, say one year, the younger ones are apt to develop pulmonary consumption.

Third. If the offspring of healthy parents, born under conditions named above, escape the disease, their children are apt to develop pulmonary consumption.

The discussion was animated on every point bearing on the prevention of the spread of tuberculosis, and is destined to be renewed at future meetings, many members not having had a full freedom to express their views.

Prior to the midday excursion, on the second day, remarks were made by Health Officer Smith and Dr. Raymond explanatory of the conditions and modifications of quarantine administration in the harbor of New York. The remarks of Dr. Smith dealt largely with details of construction and will, when printed, have that value that belongs to a work of reference. It transpired later that while, or about the time, these remarks were

being made, there was delivered at the morgue of the quarantine hospital the body of a yellow fever victim, a sailor who had died a few hours before on a steamer coming in from a Central American port. A few members only knew what the morgue contained.

The morning session of the third day, October 24, was chiefly given up to papers and discussions having relation to garbage disposal and the pollution of streams. The chief papers were by Drs. Martin and Kilvington, the Health Commissioners of the cities of Milwaukee and Minneapolis. According to Dr. Martin the cremation of city refuse had not proved to be the success that it promised to be in the Western cities. He said:

"Cremation as a system has had its day, and a brief one it has been.

"The present system in the city of Milwaukee is the Merz system, which, from June 11 last, has given the best of satisfaction. The quantity of garbage collected is 40 tons daily, which with that brought to the works by the commission dealers, wholesale men and grocers, brings the total up to 50 tons, which is promptly disposed of. The works are situated in the slaughter house district, and the building is a two-story frame, 62 by 110 feet. The garbage teams drive up an inclined roadway to the second story, where the garbage is thrown on the floor to be scraped into the driers, of which we have eight. The time occupied in drying the garbage varies, of course, with the quantity and amount of moisture, but is usually from eight to eleven hours."

Another practical subject, the use of sulphur as a disinfecting agent in the hands of sanitary officials, was brought to the front by a paper by Dr. Cyrus Edson, of New York City. Many health officials participated in the debate on this subject. The preponderance of opinion seemed to be in favor of the value and efficacy of sulphurous fumigation when thoroughly performed, and when the vapor of water was freely generated in the apartment containing the infected materials; also that the wetting of articles with water is not desirable, lest there be a bleaching process set up and a damage to certain fabrics by sulphurous acid gas.

On behalf of Dr. Rauch, of Chicago, the following motion was introduced and suitably referred:

WHEREAS, Asiatic cholera, leaving its usual restricted bounds, threatens to advance by the same lines that it has followed in the last four epidemics, be it

Resolved, That the American Public Health Association desires to call renewed attention to this fact, and to urge that quarantine authorities on the Atlantic and Pacific seaboard and boards of health throughout the country make every effort to prepare for this threatened danger.

The evening of the third day had two papers finely illustrated by stereopticon views: first, a paper on *Sanitary Disposal of the Dead*, by Rev. Charles R. Treat, of New York City; second, one

by Dr. Benjamin Lee, of Philadelphia, on *The Sanitary Reasons why Cuba should be Annexed to the United States*. The dangers from yellow fever, small-pox and leprosy, under the present Cuban Government, are such, Dr. Lee maintains, that this country may lose, in a single season, by imported infectious disease, more than the island of Cuba is worth if it were bought outright from her proprietors, at their own valuation. The illustrations of leprosy, presented by Dr. P. A. Morrow, of New York, were greatly admired; the closing one being a portrait of the late Father Damien, the leper priest of Molokai.

According to the paper of Rev. Mr. Treat the newly proposed plan of sanitary entombment will bring down the cost of corpse disposal to about \$15 for each body entombed.

The morning of the fourth day, chiefly occupied though it was by official reports and routine business, was partly given up to a discussion of *The Causes of Infant Mortality*, based upon a vigorous paper, prepared by Dr. R. O. Beard, of Minneapolis, and read by Dr. Gihon. Several health officers participated in the debate, who showed the difficulties they have to contend with on account of the vague or misleading nomenclature of the causes of death employed by many physicians. Dr. G. C. Ashmun, of Cleveland, instanced the use of the term "marasmus," by physicians of prominence, to cover nearly every case of infantile mortality, especially when the mortality must be published in institutional reports. The phrase indicates nothing that is useful for statistical or sanitary purposes, and should be put in the same category with "debility" and "heart failure."

Dr. W. M. Smith held that it should be the duty of every health officer to decline to accept certificates of death which evade, omit or vaguely state the cause of death, not less with regard to infant than adult mortality.

Growing out of this discussion, a motion was made for the appointment of a special committee, Dr. Jerome Walker, of Brooklyn, to be chairman, to consider *The Causes and Prevention of Infant Mortality*, and report, from year to year, at the discretion of the Executive Committee.

The convention closed about noon on the fourth day, up to which time the attendance continued creditably large. By some of the members it was pronounced the most satisfactory in the past history of the body.

The officers elected for the coming year are as follows: President, Dr. Henry B. Baker, of Michigan; first Vice-President, Dr. Frederick Montizambert, of Quebec; second Vice-President, Dr. Joseph H. Raymond, of Brooklyn. The Secretary, Dr. Irving A. Watson, and the Treasurer, Dr. Berrien Lindsley, were reelected. The following elective Trustees will serve one year: Dr. H. B. Horlbeck, of Charleston, S. C.; Dr. L. T.

Salomon, of New Orleans; Dr. Wm. Bailey, of Louisville; Dr. Peter H. Bryce, of Toronto, Canada; Dr. J. F. Kennedy, of Des Moines; and Dr. Walter Wyman, of Washington, D. C. The time of holding the next meeting, not definitely fixed, will be early in November, 1890; place of meeting, Charleston, S. C.

On motion of Dr. Plunkett, of Tennessee, a special vote of thanks was tendered to Dr. J. H. Raymond, chairman of the Brooklyn local Committee of Arrangements, for his arduous and successful efforts on behalf of the convention then drawing to a close. The daily papers of Brooklyn and New York City were very cordial and appreciative, reporting the proceedings very fully and praising without stint the efforts of the members on behalf of the preservation of public health.

Obstetrical Society of Philadelphia.

Stated Meeting, September 5, 1889.

(Concluded from page 647.)

DR. JOSEPH HOFFMAN reported

A SERIES OF ABDOMINAL SECTIONS, WITH
SPECIAL REFERENCE TO COMPLICATIONS.

He said: The list of operations may be classified as follows: One strangulated ventral hernia; one appendicitis and hæmatocele; sixteen cases of ovarian and tubal disease with adhesions, inflammation, and occlusion of the tubes, with one death, the result of sepsis. Where the infection came from, for a long time puzzled me. Months after the death I learned that the patient had had a miscarriage brought on instrumentally, and the mystery was solved. In other words, I believe the tubes were septic, and gave rise to the peritonitis.

By this case I believe there is sufficient learned to warrant the practice of cauterizing the tubes after ligation and section in all doubtful cases where there is the least suspicion of infection. If this is not done, they should be thoroughly disinfected and the abdomen drenched. I have had no other death from like cause, or from peritonitis from any cause. Six cases of pyosalpinx; one occurred during pregnancy, and the operation was done to save life. The woman miscarried the fourth day after the operation, but made an excellent recovery, though her pains were very great during miscarriage, and were only controlled by the free use of morphia and atropia. All cases of pyosalpinx recovered. They are all working in comfort, save one, who has lately died of tuberculosis. This last case is strongly in support of Bernutz's view, that pus in the tubes is a forerunner of general tuberculosis.

In two cases, the gonorrhoeal origin of the

pyosalpinx is well established ; in two, the history points to post-puerperal origin ; in the remaining two, the origin is doubtful, though in one of the cases I strongly suspect a specific start.

One died of shock—never coming out of anæsthetic. She was a hard drinker.

In two cases the tumor removed was dermoid. Both were small. In one of these cases the uterus was rudimentary, though the woman had for a long time worn a pessary for a so-called displacement, introduced by a specialist in gynecology.

There is sufficient commentary here on the use and abuse of pessaries without further remark. In two cases exploratory incision was made. In both, the women recovered quickly. One of these soon after died after tapping ; from what cause, I do not know. I visited her for a day or two after tapping her, and was told that the patient was feeling so well that no further visit was necessary. In a week, or thereabouts, I learned of her death in the hands of another. The whole air of the matter was unsavory, and I am not sorry to remain in ignorance concerning it. The second exploratory incision was due to an error in diagnosis. The uterus was retroverted, a miscarriage having occurred a short time previously. There was a peculiar thickening of the right broad ligament, which immediately led to the blunder. I examined the patient on my table soon after her recovery, and had I not known that I had erred before, the condition was such that I would have done so again. Two small ovarian cysts ; both recovered. One case of omental hernia, one case of extra-uterine pregnancy. One case of operation for adhesions due to previous operation. The result has now a greater measure of success than I hoped for a short time ago.

The drainage tube was used in fourteen cases. I believe I would have had a better chance of saving one of my deaths had I used it. I have never had a death from its introduction. I have had but one fistula persisting after its use, and this now gives every sign of closing. In only one case has there been a discharge of the ligature. The patients operated upon are now all living but four. They are all able to do their work comfortably save two. One case, I believe, is reported to have had another operation. She was a most ungrateful baggage, and I trust she will tarry a long while on earth for the experience she will bring to others. I have had one case of hernia after simple section. The woman was fat, and neglected her bandage. In two cases where it existed previously to operation it still is present. I did not really operate for its cure. I have found drainage and flushing the abdomen to be of the greatest service in cleansing the abdomen of *débris*, and believe them indispensable. Free saline purgation, or when the

salts are not retained, mercurial purgation, is of the greatest benefit in severe wind-pains. These are probably more frequently the cause of pain soon after the operation than inflammation, though there is no doubt that here, also, these purges are of undoubted value. In the question of diagnosis, I find it is much easier to say there is a lesion than to map it out exactly or to define it. I have found marked trouble in cases where expert examination pronounced disease absent ; in others, where one thing seemed to be the trouble, another was found present. So far as pain is concerned, it does not always indicate the spot of the lesion. I have found one side the most diseased when it was freest from pain.

In the thirty-three operations recorded, two deaths have occurred. No patient was operated on by myself more than once. The first death occurred early in the series. In the last twenty-six cases there has been but one death. The last eighteen cases have been without death.

DR. JOSEPH PRICE reported

TWO OPERATIONS FOR EXTRA-UTERINE PREGNANCY.

The first case I have to report is that of a white woman, æt. 35, nursing a child of 13 months. Menses appeared on the fourth month of lactation, and remained perfectly regular at intervals of twenty-seven days ; four days duration ; were absent two periods, followed by paroxysms of pain and collapse. At this point I saw her, and operated immediately for ruptured tubal pregnancy. I found about a quart of clotted blood in the peritoneal cavity ; tubal rupture left side ; hydro-salpinx right side. Clean removal of both sides ; irrigation ; drainage ; recovery.

The second case, occurring in a pure negress, is of great interest. I am not satisfied, from the microscopical appearance, that it is a true ovarian pregnancy. Ovarian cysts are very rare in true Africans. In the blood cyst, I found something for all the world like placenta and membrane. I do not wish to put this on record as an ovarian pregnancy until I receive the report of Dr. Henry Formad, the pathologist. There also existed in this case a hydro-salpinx of the other side—both demonstrating most beautifully the causal relation of tubal disease to ectopic gestation. One point of great interest in connection with these cases that survive the rupture and go into the hands of the surgeon, is the marked difference in the character of the hæmorrhage from those that go into the hands of the coroner—and they are numerous. In the latter cases, the hæmorrhage is overwhelming, and the abdomen is found full of blood. The surgeon finds probably one-fourth the blood. Dr. Formad, the coroner's physician, tells me that in one case he found the peritoneum deluged with blood, and the little fœtus sitting, or washed up on the pan-

creas. Its object was probably to try and escape a possibility of electrical treatment.

DR. J. M. BALDY reported a case of

FIBRO-CYSTIC TUMOR OF THE UTERUS.

Mrs. A., æt. 35 years, married, no children. Has had a lump in her abdomen for fifteen years, which remained quiescent until within the last two years, since which time it has grown rapidly. Menses have gradually become irregular and profuse; bowel and bladder symptoms have become severe; pus has appeared in the urine; abdomen is constantly swollen, and very painful; general health had begun to suffer severely. Examination showed a uterine tumor, and its removal was advised, the dangers of the operation being fully explained. Operation was eagerly accepted. The tumor was removed one week ago last Tuesday, and proved to be an extremely nodular fibroid, which had undergone cystic degeneration in part, and in other parts is quite œdematous, as can be seen by the specimen which is here before you. The mass was firmly wedged into the pelvis, and was delivered with the greatest difficulty, leaving practically no pedicle at all. The case was treated by supra-vaginal amputation, a wire nœud being first placed around the lower portion. The stump was treated by the extra-peritoneal method, as advocated by Bantock. After the tumor had been cut away, there was left a stump with a diameter of over three inches; this was gradually trimmed away until it was reduced to about an inch and a half in diameter. The operation was altogether the most trying and most difficult one of this kind I have ever performed or seen.

This case presents the opportunity for a few remarks on the method of treating the pedicle in hysterectomy, and on the use of electricity in fibroid tumor of the uterus.

There are two methods of treating the stump—the intra-peritoneal, as advocated by Martin, and the extra-peritoneal, as advocated by Bantock. All other methods devised or proposed are simply modifications of these two, and are far from being as good as the originals. A so-called half-way method proposed by Kelly last winter has so many objections for general application, that it is hardly worthy of consideration, excepting for picked cases; and these must be cases of the simplest kind, with a pedicle which can be easily dealt with. In the *New York Medical Journal*, for July, Douglas has called particular attention to the defects of this departure.

What we want are results, and in questioning different gentlemen who are experimenting with the so-called improvements in hysterectomy, I find almost universally that their losses amount to from 30 per cent. to 50 per cent. The patients who get well may do so quickly, and the operations may be very beautiful, theoretically, but

the results are murderous! Until a larger number of cases have been reported, and the results are very decidedly better, I prefer to pin my faith to one or other of the two original methods. Of these two, the results obtained by the extra-peritoneal method are, at present, very decidedly the best, and have proven eminently satisfactory in my hands. Martin, by the intra-peritoneal method, reports a series of eighty-four cases, with twenty-five deaths. Later, he has thirty cases, with three deaths; and still later, he has "another series with good results;" and last, a series with bad results." And so, after an experience of much over one hundred and twenty-five cases, he ends up with a series so bad that he does not publish it. In contrast with this stands Bantock's record, by the extra-peritoneal method, of fifty-seven cases with only twelve deaths, and his results continually getting better to the end. He now has a run of thirty or forty cases without a death. These figures speak for themselves. After all his experience, Martin ends by saying, "So I think we must wait for a larger number of cases before deciding this question."

Of the twenty-five deaths met with by Martin in his first eighty-four cases, fifteen died of "bleeding, embolism, and collapse," all of which, of course mean hæmorrhage. Now by the extra-peritoneal method, these would all have been saved, as bleeding cannot possibly occur if the wire does not slip or break. Again, ten of Martin's cases died of sepsis; this also is much less likely to happen by the extra-peritoneal method, as all cut surfaces are outside the peritoneal cavity, in plain sight, and under perfect control.

When Martin has finished his operation and drops the stump, as I have seen him do, the appearance to the naked eye is simply perfection, and one carries away the feeling that everything is cleaner than the stump of an ovariectomy. On the other hand, when the stump is left outside, as I was taught by Bantock, the after-treatment is often tedious, and the convalescence prolonged. If the stump is not perfectly dry it is apt to suppurate, and, at best, it is an unsightly affair. But when we contrast the results, there can be but one choice, if we give proper consideration to the safety of our patients. Not only are Martin's own results bad, but in the hands of less expert and experienced operators the mortality is very high. Even Bantock has lost four out of five cases by the intra-peritoneal method. By the extra-peritoneal method, five or six of us here in Philadelphia can now put on record twenty or more cases with only about two deaths in the lot, and those were cases in which there was extensive cancerous involvement of vital organs. In fact, our mortality is about as good as that in ovariectomy.

The use of electricity in fibroids is not without

its dangers and impossibilities. Such a case as that before you is wholly beyond the reach of this palliative agent. To have done any good to that tumor it would have to be punctured, and this large cyst which you see, emptied. To have done so in this case would have required a puncture four or five inches deep; the needle would have to have penetrated the whole length of the tumor. Dr. Massey punctured one of these cystic tumors (if I recollect correctly) last winter, and the patient very promptly died of sepsis. At the June meeting of this Society Dr. Price presented two specimens of fibroid tumors. One was a large œdematous myoma, containing blood vessels as large as the iliacs, and, as he then said, one might as well have tried to dissipate the iliacs themselves as those vessels; a puncture of any one of them would have meant almost instant death. The second specimen was a fibro-cystic tumor with nothing but a thin membrane between the cyst cavity and the uterine cavity, the membrane being lined with a mass of blood-sinuses as large as one's little finger. An attempt to puncture that case would have meant almost instant death. And so it is with many other specimens on record. The fact is plain that there is a large class of fibroid tumors totally unfit for the electrical puncture; and to make the danger in these all the greater, they cannot always be differentiated. For instance, the fibro-cystic character of the specimen before you was not even suspected during life, although repeated examinations were made. There is plenty of material here for earnest thought, and it ought to be a warning against blindly rushing into the use of electricity in all cases, simply because the enthusiastic advocates of this treatment fail to bring out its dangers, and, in fact, only too universally hide them.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Some Interesting Facts about the Brain—Poisoning by Arsenic—The Overcrowding of the Medical Profession—Statistics of Admission to Scottish Lunatic Asylums—The Mode of Treatment at Aix les Bains—The Anglo-American Vienna Medical Association—Miscellaneous Notes.

There has been published the result of some measurements of the heads of students in the Cambridge University, showing that although it is pretty well ascertained that in the masses of the population the brain ceases to grow after the age of 19 or even earlier, it is by no means so with University students, and that the men who obtain University honors have larger brains than the average. Further careful experiments show

that the brains of human beings change in size. Taken at different times in the same individual the length of the head varied $\frac{1}{8}$ inch, the width $\frac{1}{8}$ inch, and the length as much as $\frac{1}{2}$ inch. The variations were not due to head growth. They sometimes showed reduction of size to the extent of 6 per cent.

In a recent discussion upon "Poisoning by Arsenic," it was generally admitted that acute cases followed by urgent symptoms and death were best known in the practice of forensic medicine, but arsenic could be administered as a slow poison, and death might occur six weeks after the victim had ceased taking arsenic. Nevertheless the symptoms are much the same in both cases, varying only in the time of development. There are first troubles of the digestive organs; secondly, catarrhal bronchial irritation and eruptions on the skin; thirdly, loss of sensibility, numbness of the lower limbs, cramps, acute pains, followed by local insensibility; and the fourth and final stage is indicated by paralysis. The case was mentioned of a woman who was poisoned at Havre, and whose hair was cut and analyzed. One hundred grams of her hair yielded 1 milligram of arsenic. It was thought that there should be no difficulty in detecting arsenical poisoning if the bones and especially the cancellous tissue was analyzed.

During the long vacation just ended many journals have taken the opportunity to warn intending students of medicine that the ranks of the profession are at the present time tremendously overcrowded, and that it was impossible for them all to make an adequate livelihood. For the last five years an average of 1,921 entering medical students have annually registered their names, which shows if competition has been severe in the past, it is certainly to be more so in the near future. At his opening lecture Dr. P. S. Abraham, at the Westminster Hospital, referring to the progress made in the medical profession, said the "barber surgeon" was long since extinct and the hybrid medical tradesman was becoming obsolete, and that Voltaire's oft-quoted dictum that a medico "was a man who poured drugs of which he knew little into a body of which he knew less" was not quite so true now as it was. He pointed out the fact that London was the healthiest city in the world, as a concrete result of the attention paid to the advice of sanitarians. He admitted that in recent years the State had more and more recognized its obligations to the public weal and had done much for the science of health, but a great deal was still left to private effort and generosity. They had to await the initiation by his Royal Highness the Prince of Wales and his "Damien Committee" of a much needed crusade of investigation against one of the most terrible scourges of mankind, and they had to leave gaps in their knowledge of an important therapeutic

agent until an enlightened Indian prince came forward and handsomely defrayed the cost of its re-examination.

Statistics of admission to Scottish lunatic asylums indicate an unmistakable seasonal variation. The Report of the Commissioners contains a table showing the numbers for each month of the eight years 1880-1887. The average monthly total is 1,699, but during the three months of May, June and July that average is exceeded by 628, while in the four months of October, November, December and January the admissions are 462 below the mean. These two periods of maximum and minimum are the extremes of a regular annual rise and fall. A steady increase is perceptible through February, March and April, and after the culmination in June there is a similar fall from July to the autumnal equinox. Similar figures collected for the years 1865-1874 reproduce exactly the same periodical change, differing only in the length of the maximum in early summer. Another fact which points to the same conclusion is revealed by the statistics of suicides, for Mr. Buchan and Dr. A. Mitchell showed long ago that self-murder was most common in just those very summer months in which lunacy is most rife.

Many patients are now returning from Aix-les-Bains. The patient at this health resort has to go through a somewhat curious course. He walks down—unless rheumatics have crippled him too much—to the bathing establishment in the morning. There he is shampooed and massaged, but he is not allowed, as in most places, to go home in his own clothes. He is wrapped up in blankets, is then deposited in something resembling the old sedan chair, is carried by two stout porters back to his room and put to bed. There he has to remain for some time perspiring copiously and, if possible, sleeping. In some cases there is a renewal of the massage. The patient at Aix-les-Bains is nearly always tired and always depressed, but people who have tried the place for many years describe its results as miraculous.

In Vienna some English and American physicians have resolved to found a society to be called the Anglo-American Vienna Medical Association. The society is founded with a view to giving information and moral support to the English and American doctors and students of medicine who come to the Vienna University. As a rule there are but few students of medicine from England and America, but a great number of doctors of medicine. In the last half year 105 American doctors and several lady doctors were on the books.

At a meeting of the Society for the Study of Inebriety, held in the rooms of the Medical Society of London, Dr. Norman Kerr, the President, stated that though he had known arsenic, iodine and similar substances to make a permanent im-

pression on the nerve centers, and taken habitually to excess, he could not class arsenic eating alongside of alcoholism or morphinism as a true narco-mania or inebriety. It was resolved to ask for a Parliamentary committee of inquiry into the Inebriates Acts, with a view to amend legislation.

The many Americans and others who winter in Venice will be pleased to hear that the town is to undergo a complete sanitary rehabilitation. The works to be commenced with this object will spread over ten years, and the first provisional estimate of the outlay amounts to some four and a half million francs. In conjunction with this purely hygienic undertaking a plan for remodeling the city architecturally will also be carried out, for which a period of thirty years is computed to be necessary.

Lady Milne has died at a dentist's in Edinburgh whilst under the influence of gas for the purpose of having a tooth extracted.

G. O. M.

DOMESTIC CORRESPONDENCE.

Tetanus Caused by Intestinal Irritation.

To the Editor:—Whilst looking over *THE JOURNAL* of September 7, 1889, I noticed a letter from P. B. P., of New York, giving a synopsis of a paper on "Tetany in Infancy and Early Childhood," read by Dr. J. Lewis Smith at the last meeting of the New York County Medical Association, which alleged that there is no recorded instance in which lumbrice or ascarides caused tetanic contractions: but Gowers refers to three cases caused by tapeworms. This statement of Dr. Smith's brings to my mind the case of Sarah Shelton (colored), aged 12 years, which occurred in my practice a few years since. I was summoned during the month of February to see this patient, who was suffering with the most violent attack of tetanus that I had ever seen. I found her resting upon her head and heels in a state of complete opisthotonos, with the jaws firmly closed and the head drawn to the left side. Every muscle in her body seemed to be rigid except those employed in deglutition. Her arms were forcibly flexed, and the muscles of the abdomen were as hard as a brick. After a careful examination I found that there was no traumatic injury, and I at once suspected that worms in the alimentary canal were the cause of the trouble, and calomel and santaline were given in decided doses, followed by castor oil and turpentine. Her bowels were obstinately constipated and refused to respond to this treatment. Enemas were then given, upon which she passed a large ball of lumbricoids containing about thirty worms, half of which were dead. Her muscles would relax only

when under the influence of chloroform administered by inhalation. The bromides, chloral, Indian hemp and morphia were also used, but they gave only temporary relief. Finally I gave her the tincture physostigmatis, prescribed a generous diet with stimulants, and an occasional laxative. She remained in this rigid condition more than a month, but she is now as healthy and well developed as any young woman in this county. I was fully convinced then, and am now, that this species of worms was the specific cause of her condition. If you consider this case of sufficient interest you have my permission to give it a place in your excellent journal. Respectfully,

B. A. DUNCAN, M.D.

West Point, Miss., October 11, 1889.

One Cause of Sickness and Discomfort Largely Preventable.

To the Editor:—Owing to the drouth, fires, especially in swampy places, are numerous, and the atmosphere is unusually smoky and irritating to the eyes, head and air-passages. Some diseases are aggravated,¹ sleeplessness, nervous disturbance, general discomfort and, I believe, other serious troubles not commonly recognized, as due to this cause, result, because the atmosphere is to a considerable extent unfitted to properly sustain life. One apparent change in the atmosphere is to lessen, below the normal limit, the active oxygen, and this is especially true during the nights; thus, during the week ending October 19th no ozone whatever could be detected in the atmosphere at Lansing on any night except one, Wednesday. A sense of want of air, even approaching suffocation, and a weakness of the circulation, in some approaching heart failure, has been noticed.

The object of this note is to ask attention to the fact that much of this discomfort and danger to health could easily be prevented if all persons would refrain from setting fire to rubbish until after this bad condition of the atmosphere has passed. On some evenings dozens of such fires have been set in one small city in the interior of this State. "As the wind goes down with the sun," nearly all the irritating smoke and bad air from such fires built in the evening remain in the city or village, and must be breathed by the inhabitants.

If such fires must be made, it would be very much better to build them in the morning, because the movement of the atmosphere then usually increases until 2 P.M., and that may carry the foul and irritating air from such burning rubbish outside the city or village.

HENRY B. BAKER, Secretary.

Office of the State Board of Health, Lansing, Mich., October 23, 1889.

NECROLOGY.

Morse K. Taylor, M.D.

Morse K. Taylor, M.D., late Surgeon U. S. A., died at his residence in San Antonio, Texas, on the 20th of October, 1889, after an illness of two weeks.

Dr. Taylor was born in Watertown, N. Y., on May 14, 1823. He subsequently moved into Michigan, where he commenced his military life as Second Lieutenant in the First Michigan Cavalry, and served through the war with Mexico with credit and was honorably discharged in July, 1848. After his discharge he commenced the study of medicine and graduated from the medical department of the University of Michigan at Ann Arbor in 1852, and soon commenced the practice of his profession in Galesburg, Ill. On the organization of the Chicago Medical College, then called the Medical Department of Lind University, in Chicago, 1859, he was appointed to the chair of Physiology and Hygiene in that institution. He discharged the duties of that position with ability and to the satisfaction of both faculty and students, but only two years later, 1861, the war for the preservation of the Union commenced, and he was offered the position of Colonel of the Fourth Illinois Infantry.

This he declined and accepted the office of Surgeon of the Twenty-sixth Illinois Infantry in August, 1861. The next year he was commissioned Surgeon of United States Volunteers, and served in that capacity until October, 1865, when he was honorably mustered out, having been promoted to the rank of brevet Lieut.-Colonel for faithful and meritorious services. The war having closed he settled in Keokuk, Ia., and commenced practice.

In May, 1867, however, he was commissioned Captain and Assistant Surgeon in the United States Army, and was assigned to active duty on the Western frontier. He continued in active service in different places in the West until 1879, when he was transferred to New York, next to Detroit, and afterwards to Fort Sill, in the Indian Territory, where, in 1884, his wife died, to whom he had been married at Clinton, Mich., April 25, 1849. In June, 1882, he was made Surgeon with the rank of Major, and on the 14th of May, 1887, he was retired from active service, having reached the age of 64 years, and ordered to San Antonio, Texas, the place he had chosen for his residence. Here he identified himself with all the more important interests of the community, social, educational and religious, and won the respect of all.

He was a physician of marked ability and scientific attainments; an active member of the American Medical Association, and an accurate writer.

¹ During the week ending October 19th, tonsillitis increased 50 per cent., plenitis 33 per cent., inflammation of the brain 25 per cent., and membranous croup 25 per cent. Probably other causes than the one here mentioned had influence, but the other atmospheric conditions were not such as to account for such increase.

A correspondent at San Antonio says: "He had in process of completion a work on the climatology of Texas, which for scope and detail is wonderful." His son, Dr. F. M. Taylor, has been intimately associated with him in his more recent literary and professional work, and it is hoped that he may complete the same for the public.

N. S. D.

Thos. Snowden, M.D.

Dr. Thomas Snowden, a resident of Peekskill, N. Y., died in New York City October 11, æt. 64 years and 8 months. He was an alumnus of the College of Physicians and Surgeons, New York—a member of the class of 1849.

MISCELLANY.

COMPARATIVE OBSTETRICS.—A giraffe has been born in the Cincinnati Zoo, the first delivery of this kind that ever took place in this country. It is said to have been a head presentation and to have been a long labor, the baby being nearly 6 feet from tip to toe when dropped.

THE AMERICAN ACADEMY OF MEDICINE will hold its thirteenth annual meeting at the Leland Hotel, Chicago, Ill., on Wednesday and Thursday, November 13 and 14, 1889. Papers will be read as follows:

"Object, Scope and Mission of the Academy," Drs. Traill Green, of Easton, Pa., Edward Jackson, of Philadelphia, and R. Lowry Sibbet, of Carlisle, Pa. "Literary Degrees as they Interest the Academy," Dr. Richard J. Dunglison, of Philadelphia, Pa. "Preliminary Requirements of American Medical Colleges of the Present Time," Dr. John H. Rauch, of Springfield, Ill. "Instruction by Recitation," Dr. Henry M. Lyman, of Chicago. "Methods of Teaching Medicine," Dr. Wm. F. Waugh, of Philadelphia. "Medical Harmony, as Influenced by Preliminary Training," Dr. F. C. Heath, U. S. M. H. S., Detroit, Mich. "Professional Integrity vs. the Code," Dr. S. N. Benham, of Pittsburg, Pa. "The Institutes of Medicine; the Necessity of Their Being Taught in Our Schools," Dr. J. Cheston Morris, of Philadelphia, Pa. "Gymnastic Medicine," Prof. E. Hitchcock, Jr., M.D., of Ithaca, N. Y. "Vice and Crime," Dr. J. A. Thacker, of Cincinnati, O. "The Moral Treatment of the Insane," Dr. Gersham H. Hill, of Independence, Ia. "Sulphonal in Hysteria," Dr. Andrew C. Kemper, of Cincinnati, O. "The Physiological Action of the Typhoid Fever Poison," Dr. N. S. Davis, Jr., of Chicago. "Malignant Tumors of the Mammary Glands, with Cases," Dr. E. F. Wilson, Columbus, O. "Improved Operation for Varicocele," Dr. E. Wyllis Andrews, of Chicago. "What is the Proper Function of American Medical Colleges of the Present Time?" Dr. Samuel J. Jones, of Chicago, Ill.

Reports will be read from various special and standing committees; among the latter, one by Dr. Justin E. Emerson, of Detroit, Mich., on "Preliminary Requirements of Medical Colleges," and one by the Secretary of the Academy, Dr. Dunglison, on "Laws Regulating the Practice of Medicine."

The President's address will be delivered by Dr. Lear-tus Connor, of Detroit.

The annual collation will take place at the Leland hotel on Wednesday evening, November 13th.

RICHARD J. DUNGLISON, M.D.,
Secretary.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from October 26, 1889, to November 1, 1889.

Major Morse K. Taylor, Surgeon U. S. A. (retired), died October 20, 1889, at San Antonio, Texas.

Major Robert M. O'Reilly, Surgeon, par. 3, S. O. 24, October 16, 1889, from this office, is so amended as to grant him leave of absence for six months, with permission to leave the United States, by direction of the Secretary of War, to take effect November 1, 1889. Par. 6, S. O. 252, A. G. O., Washington, October 29, 1889.

By direction of the Secretary of War, so much of par. 2, S. O. 44, October 16, 1889, from this office, as relates to Lieut.-Col. Anthony Heger, Surgeon, is amended to read as follows: Lieut.-Col. Anthony Heger, Surgeon, is relieved from further duty in the Div. of the Atlantic, and will at once report to the Major-General commanding the Army for duty in this city. Par. 3, S. O. 252, A. G. O., Hdqrs. of the Army, October 29, 1889.

Major Joseph R. Gibson, Surgeon U. S. A., granted leave of absence for seven days, to take effect from date of being relieved from duty at Ft. Sheridan, Ill. Par. 9, S. O. 249, A. G. O., October 25, 1889.

By direction of the President, Major Wm. H. Forwood, Surgeon, is detailed as a member of the Army Retiring Board at St. Paul, Minn., convened by War. Dept. order dated January 12, 1889, published in S. O. 10, January 12, from Hdqrs. of the Army, vice Capt. Edgar A. Mearns, Asst. Surgeon, who is hereby relieved. Par. 12, S. O. 254, A. G. O., October 31, 1889.

By direction of the Secretary of War, so much of par. 10, S. O. 242, A. G. O., October 17, 1889, as directs Capt. Louis M. Maus, Asst. Surgeon, to report in person for duty at Ft. Stanton, N. M., to relieve Capt. Marcus E. Taylor, Asst. Surgeon, is revoked, and Capt. Taylor will proceed to Boise Bks., Idaho Ter., as directed in said order, as soon as medical attendance shall be provided for Ft. Stanton. Par. 10, S. O. 249, A. G. O., October 25, 1889.

By direction of the Secretary of War, Capt. Wm. C. Gorgas, Asst. Surgeon, is relieved from temporary field duty in the Dept. of the Missouri, and will join his proper station (Ft. Barrancas, Fla.). Par. 2, S. O. 25, A. G. O., October 28, 1889.

Capt. Louis M. Maus, Asst. Surgeon U. S. Army, granted leave of absence for two months on surgeon's certificate of disability. Par. 11, S. O. 249, A. G. O., October 25, 1889.

First Lieut. Julian M. Cabell, Asst. Surgeon U. S. A., granted leave of absence for two months, on surgeon's certificate of disability, to take effect about November 10, 1889. Par. 7, S. O. 249, A. G. O., October 25, 1889.

APPOINTMENTS.

First Lieut. Charles Willcox, Asst. Surgeon U. S. A., to rank from October 29, 1889.

First Lieut. Harlan E. McVay, Surgeon U. S. A., to rank from October 29, 1889.

First Lieut. E. B. Frick, Surgeon U. S. A., to rank from October 29, 1889.

By direction of the President, the Army Retiring Board convoked at Vancouver Bks., W. T., by War Dept. order dated December 15, 1888, published in S. O. 292, December 15, 1888, from Hdqrs. of the Army, is dissolved. Par. 1, S. O. 230, A. G. O., Washington, October 26, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 2, 1889.

P. A. Surgeon F. S. Nash, detached from duty in Bureau Med. and Surg., and to the "Petrel." November 14, 1889.

Medical Inspector E. S. Bogert, ordered to examination preliminary to promotion to Medical Director.

Asst. Surgeons O. D. Norton, I. W. Kite and E. P. Stone, ordered to examination preliminary to promotion to P. A. Surgeon.

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No. 20.

ORIGINAL ARTICLES.

ADVANCES IN OUR KNOWLEDGE OF SOME CEREBRAL, OCULAR, AND IN- TRA-ORBITAL LESIONS; WHICH FACILITATE THE DIAGNOSIS AND TREATMENT OF IM- PORTANT DISEASES.

Read in the Section of Ophthalmology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY HENRY W. WILLIAMS, A.M., M.D.,
OF BOSTON.

PROFESSOR OF OPHTHALMOLOGY IN HARVARD UNIVERSITY.

In offering a short paper to the Association I assume that knowledge independently acquired in a special department of practice may be a useful contribution to the general store; especially if illustrating the importance of an adequate theoretical and clinical training in order that the value of local phenomena, and their relation to coexisting conditions of other organs and of the general system, may receive due estimation. Much of our information, on points to which I am to refer, is of so recent date, that I trust a brief epitome of some personal observations may not be unacceptable.

INTRA-CRANIAL GROWTHS.

When we remember that less than forty years ago the existence of intra-cranial growths was usually but dimly suspected from the existing symptoms, and only rarely demonstrated at autopsy; and that we are mainly indebted for the first and most positive recognition of their presence, to the disclosures revealed through the medium of the ophthalmoscope, with which we were endowed in 1851 by Helmholtz, we may well congratulate ourselves on the brilliant advances in cerebral pathology and cerebral surgery which his invention has done so much to render possible; as well as on the vast increase of our knowledge of intra-ocular lesions obtained through its assistance. These results afford a striking instance of the direct application of purely scientific investigations to the benefit of man.

But while being thus enabled to assert the existence of intra-cranial growths, we did not at once recognize the full therapeutic importance of

this newly acquired knowledge. Unable at first to discriminate between those specific formations which are often amenable to constitutional treatment, and those of local origin, or to determine accurately the position of the lesion, we often looked on helplessly while the disease went on to its sad termination.

I offer a few instances from my own experience as a contribution to the symptoms and history of early recognized cases which were uninterrupted in their course and were verified by autopsy.

Soon after the addition of the ophthalmoscope to our optical resources, I saw in consultation a gentleman in middle life, on account of loss of vision. The diagnosis of cerebral tumor was made. As the disease advanced the senses of taste and smell were also gradually abolished, and death occurred about six years from the invasion of the disease. The tumor, which was shown to me, was of about the size of a man's fist. Not long afterwards, another gentleman of similar age came under my care, in whose eyes the condition of the optic disc and retina justified the same prognosis, and led me to predict a probable eventual failure of other senses, in addition to the loss of sight—which result slowly ensued. Two distinguished New York *confrères* confirmed my opinion. Despairing of aid from our profession, the patient was induced to place himself in the hands of charlatans, whose sanguine promises of relief were followed by no other results than the copious depletion of his purse, and at last he came again under the care of his family physician. The autopsy disclosed an enormous cerebral tumor, slowly formed during the six years' continuance of his disease, and which I had an opportunity to examine.

A middle-aged clergyman was brought to me by his physician, on account of failure of vision without marked cerebral or other symptoms. Surprised at my prognosis of a fatal result, as indicated by the ophthalmoscopic evidences of optic neuritis caused by cerebral tumor, his attendant asked what might be expected as to the duration of life. I said six months seemed to me a probable estimate, although it was impossible to predict with certainty. Death occurred three days beyond the above named period.

In the case of a stout middle-aged woman whom

I saw from time to time for six months, the diagnosis was made very early, but there were no severe symptoms until a short time before the fatal termination. At the post-mortem we found a tumor no larger than a filbert, at the base of the brain, surrounded by softened cerebral substance.

A *confère* came a long distance to see me, accompanied by his physician. He had only moderate pain and lessened vision, but no diminution of intellectual or physical vigor to any great extent; although, when I made the diagnosis of optic neuritis caused by intra-cranial growth, perhaps in the cerebellum, his friend agreed with me that this explained his symptoms better than any other theory. The patient returned home, seemingly little fatigued by his journeys, but died three weeks afterwards. The tumor, found in the cerebellum, was sent to me for inspection, and was of the size of a pullet's egg.

I have seen but one instance in which the morbid ophthalmoscopic appearances were monocular: a case of a young gentleman from a Western city, who complained of lessened vision in his left eye, with a moderate degree of pain about the left temple and supraorbital region. The ophthalmoscope disclosed optic neuritis, associated with retinal hæmorrhage in the left eye; the right eye remaining normal. These phenomena, with the localization of the pain, led me to make a diagnosis of tumor between the left eyeball and the optic chiasma. Little increase of symptoms or change of ophthalmoscopic appearances occurred for some weeks; until, about a fortnight before death, the pain became greatly aggravated and extended to the eyeball itself, with much depreciation of vision. At the post-mortem I found a tumor of the form and size of a large olive, which, lying upon the supraorbital plate, had gradually caused its erosion and, at last, perforation; so that the tumor had come to press upon the eyeball, and thus to occasion the sudden increase of pain and loss of vision. There is reason to believe that had cerebral surgery been at that time in vogue, my patient might probably have been saved, and possibly his vision improved, by an early trepannation.

I cite some of these cases, in which post-mortem verification was obtained, as showing the varying character and course of the symptoms of intra-cranial tumors. The details as to their microscopic structure and the relative frequency of the different forms, as well as the coexisting functional disturbances which aid in determining the localization of the morbid growths, have been fully set forth in the results of the admirable researches of v. Graefe, Allbut, Ferrier, Hughlings Jackson, Gowers, Bramwell, Horsley and other observers. These frequently enable us, by a comparison of the indications afforded by the existing local signs, the appearances seen with the ophthalmoscope, and the varied derangement of nerve

action, to designate with great accuracy the position of these intruding growths, and to estimate their development; and thus, in a large proportion of cases, we may obtain data which enable us to decide whether the conditions are such as to justify operative measures, or whether these would be inexpedient; or if reabsorption of masses having a specific origin may not, perhaps, be obtained by constitutional remedies.

We have seen that the symptoms in different cases vary greatly in intensity; not always corresponding with the size or rapidity of growth of the neoplasm, but rather with its situation and its relations to important parts. Cases now and then occur where these symptoms are very slight or even absent, and the lesion is only discovered after death. The same is true, exceptionally, as regards the characteristic ophthalmoscopic signs. Although, when present, these peculiar forms of optic neuritis and retinal apoplexy afford perhaps the most conclusive evidence of cerebral tumor, yet these are occasionally lacking, where other indications of tumor exist; or their stage of acute engorgement may subside, to be followed by atrophy of the opticus and of the retinal vessels. Even where these changes are observed in a marked degree vision is not always materially or permanently affected. But though so valuable in disclosing the existence of morbid intra-cranial growths, the ophthalmoscope seldom affords a clue as to their position, which must be determined by the concurrence of other local and general symptoms; such as limited headache, as tenderness on percussion of the skull, vertigo, paralysis or paresis of motor nerves of the eyeball or other cranial nerves—which often indicate with great exactness the situation of the neoplastic growths.

Doubtless cerebral surgery will become more and more precise and the proportion of successful operations larger, as experience determines with yet greater exactness what intra-cranial growths are and what are not amenable to surgical treatment, and what improvements may give the best results in the removal of what would be otherwise invariably fatal lesions.

INTRA-OCULAR CONDITIONS HAVING IMPORTANT RELATIONS WITH OTHER DISEASES.

Only a generation ago the suggestion that we should look into the depths of the eye to detect the presence of Bright's disease, meningitis, malaria, lead poisoning, of syphilis, of a tendency to apoplectic effusion, of albuminuria in pregnancy, or of post-partum pyæmia, would have been deemed in the highest degree chimerical;—but these, as we know, are but a few of the many lessons we may read in the retina, the optic disc, the choroid and the vitreous, by means of Helmholtz's ophthalmoscope. Not the least of the brilliant services of this instrument is its afford-

ing the proof, through its revelations at the fundus of the eye, that myopia, or near-sightedness, is not merely an inconvenient infirmity, but, in its higher degrees especially, a serious disease, having progressive tendencies and a disposition to hereditary transmission; and, moreover, that this is a disease of civilization, created or enhanced by inordinate use of the eyes in minute work. It is to be hoped that the profession may at length be able to induce ambitious parents to accept their advice as to moderation in regard to continued close application of the eyes of their children, as the only means of safety; and thus to prevent the too frequent impairment and even the ultimate loss of vision as a sequel of excessive study during the growing period, to which is so often sacrificed the most precious of the senses. In these cases, unfortunately, the victim has no other warning than our admonitions. This makes it the more important that the educated and the educating public should understand that preventive advice is the only resource at our command, and that grave alterations in the retina, choroid and vitreous, once induced, cannot be removed by treatment.

I was the first to propose, in 1853, the systematic substitution of early and continuous dilatation of the pupil by means of mydriatics in cases of iritis, in place of the indiscriminate administration of mercury which had been previously regarded as the only method of preventing occlusion of the pupil by plastic deposits in cases of this disease. I showed, in a report of more than sixty cases, that the effused lymph was reabsorbed, within a brief period, without the use of a particle of mercury, provided that adhesions of the margin of the pupil to the anterior surface of the crystalline had been prevented by free and constant dilatation; but that no amount of mercurialization would produce absorption, if these adhesions were allowed to form in default of the use of mydriatics. This method of treatment, of what may be regarded as to a large extent a self-limited disease where complications from effusions have been averted, has been largely accepted by the profession; to the great relief of thousands who in consequence of a rheumatic diathesis are subject to repeated attacks of iritis, and who are now spared the liability to persistent sialogical effects which so often rendered the mercurial remedy worse than the disease.

There is reason to believe, moreover, that this demonstration of the possibility of dispensing with a potent agent which had been regarded as absolutely indispensable in a frequently recurring disease, has had an influence in lessening the lavish resort to mercury as a panacea in almost every affection of the system. The report of Dr. Hughes Bennett, of Edinburgh, chairman of a committee of the British Medical Association to investigate the action of mercury on the secretion of bile,

showed, as the result of experiments on dogs, that the flow of bile was not increased, as had been supposed, by the administration of mercury; but was, on the contrary, lessened. The published results of my experience were quoted by Dr. Bennett as affording evidence that the vaunted powers of mercury in promoting the removal of plastic effusions, which had for a long period been accepted as unquestioned, had, to say the least, been exaggerated; and he suggested that two cherished beliefs as to the *modus operandi* of this powerful drug in so very general use were perhaps without adequate foundation.

PHLEGMONOUS INFLAMMATIONS OF THE ORBITAL TISSUES AS A SEQUEL OF FACIAL ERYSIPELAS.

The last subject to which I ask attention, is the insidious formation of deep-seated intra-orbital abscesses; especially as a sequel of facial erysipelas. Until 1881 I had not seen nor read an account of a case of this sort; although Graefe had already mentioned its occurrence. In that year I saw in consultation a *confière* who was convalescing from a severe attack of erysipelas, affecting the scalp, forehead, neck and face. The lids of left eye were still much tumefied and two abscesses had formed in the upper and one in the lower lid. A deep-seated abscess also formed in the cheek, near the ala nasi. These I opened, and there was a rapid lessening of swelling of the lids and of the serous chemosis which had formed upon the globe. All was apparently going on well, and vision was tested daily and found perfect. For two weeks there was gradual improvement, so that the lids opened and everything promised a speedy recovery. Suddenly I found one morning, at our visit, the chemosis more marked; the globe was rotated with difficulty, and vision, which had been good the previous day, was found to be wanting. There was a sense of discomfort in the region of the outer canthus. The ophthalmoscope showed slight indistinctness of the optic disc, a slight lessening in calibre of the retinal vessels, and a faint yellowish-gray aspect of the fundus of the eye. Without other indications than these mentioned, I expressed the opinion that a purulent nidus must have formed in the post-ocular cellular tissue, probably towards the outer side of the orbit. It was agreed that, after etherization, puncture should be made in the region most complained of. I accordingly made two punctures with a long and narrow Graefe knife, going carefully to the posterior wall of the orbit, a depth of more than 2 inches, without finding pus. No further attempts were thought then to be proper. On the following morning, the indications continuing as before, three more deep exploratory punctures were made; from the last of which pus was reached. Drainage was established, and a moderate flow continued for three or four days. Recovery was favorable as regarded a normal as-

pect and movements of the eye, and with no noticeable atrophy of orbital cellular tissue; but there remained absolute loss of vision. The grayish-yellow aspect of the fundus, which at first led me to apprehend a possible supervention of suppurative choroiditis, slowly gave place to a slightly atrophic look, but the disc did not assume a chalky white appearance, as in ordinary atrophy of the opticus.

My presumption was, that the inflammatory processes, terminating in infiltration and abscess, must have compressed and partially obliterated the retinal vessels in their passage from the optic foramen through the orbit, and previous to their entering the optic nerve to go to the retina. The early evacuation of the abscess prevented the pus from making its way backwards through the foramen or from so far protruding the eye forwards as to cause sloughing of the cornea and phthisis bulbi; but was not in season to admit of restoration of the retinal functions.

As sometimes happens with unusual cases, this first instance seen after many years of practice was succeeded by several others grouped within a brief period; in all of which, taught by this experience, and having the good fortune to see them early after the invasion, I was able to evacuate the purulent deposit before vision had been permanently damaged or other serious results had ensued.

Soon after my first case was seen, a history of seven cases was collected and published by a German observer; of which five were fatal to life, from meningitis following infiltration into the cranial cavity.

One of my cases was interesting as having occurred during convalescence from erysipelas in a boy 9 years of age, whose vision had already become so far affected when I saw him in consultation, that objects appeared red to the eye on the implicated side. Evacuation of the very deep-seated pus was followed by recovery of normal vision.

An interesting case of deep orbital abscess, not preceded by erysipelas, was ascribed by a patient, a vigorous man of middle age, to exposure to intense cold during sleep in the open air. When seen late one evening I was enabled to determine the diagnosis, but the abscess was not reached by an exploratory puncture, although considerable relief from tension was obtained. A repetition of the incision on the following day was effectual, and rapid recovery, without damage to vision, followed the establishment of drainage.

Gradual accumulation of pus in the orbit, as a sequel of necrosis of the orbital parietes, offers less acuteness of the symptoms; and this, as well as the idiopathic and partial phlegmon of the orbital cellular tissue not very rare in young children, involves less danger to life and to vision than the acute attacks above described as supervening upon erysipelas, or than such as are due

to pyæmic infection of the circulation, which usually terminate fatally. Purulent inflammation within Tenon's capsule is usually severe, and may result in loss of vision, but does not involve other dangers, as the pus generally tends towards the surface, between the insertions of two of the recti muscles. It is fortunately rare, and if early detected should be at once evacuated to afford a chance of preserving vision.

The urgency of an early diagnosis and of prompt operative interference in cases of orbital phlegmon cannot be too much insisted on. Of forty-four cases collected from all countries by Dr. A. Schwendt, of Basle, loss of vision, from amaurosis or from phthisis bulbi, occurred in about 80 per cent., and the proportion of fatal cases was 25 per cent. of the whole number, including the more benign cases resulting from orbital caries.

DR. KNAPP, of New York, said that there was a considerable literature on the orbital cellulitis and that he had collected it on the occasion of a typical case which he published in the *Archives of Ophthalmology*. The case was observed from its beginning. When the orbital tissue was completely infiltrated, the eyeballs protruded and were totally immovable, the ophthalmoscope discovered the veins large, tortuous and black, the arteries apparently absent, in reality invisible because of being empty, and very numerous dark-colored retinal hæmorrhages. In less than a week the orbital tissue became less hard, the retinal arteries were visible again and there was a new set of hæmorrhages, which were light red. The contents of the black veins showed the gradual conversion of the black thrombi into white ones, which appeared first in white sharp-cut lines, interrupted by dark red ones, which also became white, and the termination was atrophy of the optic disc, the retina and choroid, with the retinal vessels as white lines. The supposition that the ophthalmoscopic picture is best explained by compression of the orbital vessels, became much more plausible when we learned that the micrococcus erysipelatis (Fehleisen) invades by preference the lymphatics, in particular the perivascular lymphatic spaces.

I would like to point out two kinds of optic neuritis that give a relatively favorable prognosis. I mean that in children, and that connected with disseminate (alveolar) choroiditis. In the latter variety it commonly appears as a neuroretinitis, but in some cases the picture of choked disc is marked, and apt to alarm us.

DR. CHISOLM reported a case of marked papillitis occurring in a young person æt. 22, whose case was diagnosed brain tumor and treated as such by a skilled specialist and confirmed by a second, who measured the prominence of the congested infiltrated disc. By these two gentlemen the most serious prognosis was given, and early

death expected. The most conspicuous symptom was severe pain in the head, increasing on use of the eyes. No benefit or change in the discs occurring from active treatment, the case came under my care six months afterward. I found woolly discs, but no other evidences of cerebral trouble. There was some astigmatism and, believing that this irregular refraction might be the cause of the constant headache, cylinder glasses were prescribed for constant use and the use of the eyes permitted. Recovery was complete. I have recently seen the patient, after three years' interval. Her health is perfect, her eyes give her no trouble whatever. Her discs are still woolly, but no diagnosis of brain tumor is now believed.

Dr. Chisolm also reported a case of blurred vision following a case of facial erysipelas general to the head, accompanied by severe pain in the head, and for a short period by coma. Upon restoration to sensibility hearing was abolished and sight was much impaired. At no time was there any exophthalmos or indication of orbital cellulitis. Hearing has been restored. The sight, which was good before the attack of erysipelas, has never been restored. The ophthalmoscope reveals a normal fundus, nerve and retina. I deemed the case functional and expect benefit from treatment.

DR. LEARTUS CONNOR said with reference to the inflammation of the meninges in cases of optic neuritis accompanying cerebral tumor, he had observed two cases. In case first marked papillitis was attended by the evidences of cerebral tumor. He had seen three cases of cerebral tumor in which no meningitis was to be found post-mortem to account for the disease of the optic nerve. Case first was a lad æt. 16 years.

BACTERIOLOGICAL EXAMINATION OF NINETEEN AMERICAN MINERAL WATERS IN THE BOTTLED STATE.

*Read in the Section of State Medicine at the Fortieth Annual Meeting
of the American Medical Association, June, 1889.*

BY GEORGE MINGES, M.D.,
OF DUBUQUE, IOWA.

About a year ago there appeared in the *Wiener Medizinische Wochenschrift* (Vol. xxxviii, p. 749) an article by Dr. Reinl, of Franzensbad, giving the results of his bacteriological examination of a dozen bottles of each of four of the most popular European carbonated mineral waters, the deduction being that those waters in the bottled state contained too many bacteria, and that the latter had probably gained admission during the manipulations of filling and corking. Not being able to find any records of similar experiments made on our native mineral waters, I began investigations on a more extended scale about the

beginning of the present year, and continued them up to the present time. I examined 144 bottles of mineral water, including nineteen different varieties, as follows:

1. Saline naturally carbonated: Congress, Empire, Excelsior, Geyser, Hathorn, all from Saratoga, N. Y.

2. Carbonated table waters: Bethesda, Silurian, Arcadian, Henk, White Rock, all from Waukesha, Wis., and all charged with artificial CO₂; also water from the sparkling spring of Maniton, Col., the natural CO₂ of which is first collected and afterward forced back into the same water, and water from the Salutaris spring of St. Clair, Mich., which is charged with artificial CO₂ after its own natural carbonic acid has been allowed to escape. The Bethesda I also examined in the non-carbonated state.

3. Sulphur water from Blue Lick Springs, Ky.

4. Virginia Buffalo Lithia and Rockbridge alum waters.

5. Chalybeate water from Columbian spring, Saratoga, N. Y.

6. Saline non-carbonated from Colfax spring, Iowa, the Castalian water, and that from Crab Orchard, Ky.

I know that I run some risk of being considered a bacteriomanic, but the tendency of the day is to judge of the purity of drinking water more from its bacteriological than from its chemical examination, and I think that most of you will admit that dyspeptics and convalescents, for whom these mineral waters are more especially intended, and whose stomachs are already weakened in their antizymotic powers, should not ingest more than a certain maximum of bacteria. Besides, we must also bear in mind the remote possibility of infection with pathogenic bacteria.

Bacteriological examinations of a number of European mineral springs would seem to indicate that at the source they are generally practically free from germs, especially when they contain much free carbonic acid. I know of no similar examinations of our native springs *in situ*, but suppose that most of them are as pure as those of Europe, on account of the great diversity in the number of germs shown by different bottles of the same water, probably filled at about the same time. When, for example, we find that one bottle of Empire water contains six bacteria to the cubic centimetre, another 410 mould fungi, and still another over 9,000 bacteria, the conclusion becomes quite forcible that the microorganisms were not originally contained in the water, but gained entrance by subsequent contamination.

Reinl found that the bottled water from the Franzensbader Stefanie Quelle contained, on an average, 152 bacteria to the cubic centimetre, that from the Apollinaris spring 214, that from Giesshübler König Otto Quelle 1,620, and that from Krondorfer Kronprinzessin Stefanie Quelle

2,526. It has seemed to me more correct to compare the different waters, not by the average number of bacteria given by several samples, but by the number of bottles containing more than a certain maximum; and I have, therefore, considered all those bottles contaminated which contained more than 250 microorganisms to the cubic centimetre. Viewed in this light, the first of the above European waters had two bottles contaminated out of a dozen, the second three, the third eleven, and the fourth ten. By using the average number of bacteria in making comparisons we would do great injustice to several mineral waters, for example to the Hathorn, where the average of 28 germs to the ccm., as shown by the examination of five samples, is raised to almost 70,000 by the addition of a single contaminated bottle, while the Blue Lick water shows up fairly well with an average of 1,922 germs to the cubic centimetre, although all the bottles are contaminated.

I am aware of several sources of error in my examinations which I could not avoid. In no case could I determine the length of time a water had been bottled; but we know that the bacteria in water multiply with almost incredible rapidity for a time, after which they again slowly diminish in number. A representative of one of the Saratoga waters told me that they kept their bottles on an average about six months after filling before they shipped them. It would also have been well to allow the colonies to develop for the same number of days in every case; but this was impossible, as in some cases the gelatine was completely liquefied in twenty-four hours, while in others the principal growth did not begin until three or four days had elapsed. Again, I can understand that the amount of CO_2 must vary more or less in bottles of the same kind of water. Thus, the last bottle I examined, one of Manitou, seemed to contain almost no CO_2 , and this bottle, perhaps for that reason, was contaminated.

All the bottles containing carbonated water were well corked by machine and wired. The still waters were stoppered more loosely, but the corks of Buffalo Lithia and Rockbridge alum bottles were secured with circular paper seals. The bottles containing Castalian and Crab Orchard water were stoppered quite loosely with conical medicine corks. I wrote to all the springs whose waters I examined for information as to the manner in which bottles were cleansed and the carbonic acid introduced. In most cases I received very courteous replies. The Salutaris, Manitou, White Rock and Hathorn companies use the "Hoyt lightning bottle washer." The bottles for Excelsior, Bethesda and Geyser waters are cleansed by hand; those for Colfax by hand with a brush; those for Congress, Columbian and Empire waters by hand with a chain and gravel; at Blue Lick they use shot, and the Crab Orchard

and Buffalo Lithia bottles are used only new and are merely rinsed. Essentially all these methods amount to the same thing. Boiling or steaming is nowhere resorted to.

In making the examinations the following steps were taken: To prevent any impurity from falling into the bottle during the pulling of the cork, the latter was first wet, after which the dirt was removed from the edges with a penknife. The cork was then wet again and wiped dry. The bottle was violently shaken for several minutes immediately preceding its opening to insure an equable distribution of the germs throughout the water. With a pipette carefully sterilized in an alcohol flame and quickly cooled, two samples, one of 1, the other of $\frac{1}{2}$ cubic centimetre, were taken from the center of the bottle and transferred to two tubes of liquefied meat-water-peptone gelatine. To prevent any germs which might have collected around the edge of the cotton plug sealing the tube from falling into the gelatine, the plug was pushed in flush with the mouth of the tube and the latter heated in the flame until the cotton was singed before adding the water to the gelatine. Before plating out the mixture the neck of the tube was again sterilized by flame until the whole length of the cotton was singed, and the pouring was done as soon as the tube had become cool. Covered glass dishes were used instead of the ordinary plates, to reduce the possibility of contamination to a minimum, and these had been previously sterilized in the kitchen oven from before breakfast until after the noon-day meal. A number of these coated plates were put into a wet-chamber and allowed to hatch at ordinary office temperature for varying periods of time, according to circumstances, as above set forth. The colonies were counted directly when there were not more than about 500; only when there were very many was their number arrived at by calculation. When there was a marked discrepancy between the number of colonies developed from the two samples taken from the same bottle, the result was not utilized; otherwise the average of the two results was taken.

An examination of the following table shows that, on the whole, the number of bacteria in a water diminishes inversely with the amount of CO_2 it contains. It also shows that the microbicide action of artificial CO_2 is as great as that of the CO_2 naturally contained in a water, contrary to the deductions of Leone and Hochstetter; for although the Henk water contains large quantities of bacteria, the Arcadian, Bethesda and Salutaris are among the purest on the list. Sohnke claims that the addition of sodium chloride and bicarbonate neutralizes the inhibitory influence of CO_2 on bacterial multiplication, but we find that the White Rock water, which is thus prepared, has only one-third of its bottles contaminated, while two of Reinl's natural waters show

respectively ten and eleven bottles out of twelve infected. The germ-destroying influence of CO₂ is best shown by comparing with each other the Bethesda aerated and non-aerated waters.

Name of water.	No. bottles contaminated out of 12.	No. ccm. of CO ₂ to the gallon of water	Average No. microorganisms to 1 ccm.
Arcadiau	1	Artificial	52
Bethesda	1	Artificial	85
Congress	1	392.289	93
Salutaris	2	Original CO ₂ allowed to escape, and artificial CO ₂ substituted . .	59
Geyser	2	454.02	85
Silurian	2	Artificial	100
Buffalo Lithia . .	2	. . . . .	100
Rockbridge Alum .	2	. . . . .	863
Hathorn	2	375.747	68,290
Empire	3	344.669	1,407
White Rock	4	Artificial	2,218
Excelsior	4	250	8,417
Manitou	5	Recharged with its own CO ₂	886
Colfax	10	. . . . .	17,103
Henk	10	Artificial	25,000
Blue Lick	12	. . . . .	1,922
Columbian	12	272.06	2,973
Bethesda	12	Non-aerated	3,505
Castalian	12	. . . . .	40,189
Crab Orchard . . .	12	. . . . .	150,000

As a number of these mineral waters are highly extolled as table waters to be used in large cities, on the supposition that the water supply is there very impure, and as some of the well-to-do people of my native city use one or the other of the Waukesha waters exclusively at their tables, it is worth while to examine the drinking water of Dubuque bacteriologically. The latter is derived from various sources. The city water works supply a large part of the town from a clear spring on the top of the bluffs. A sample of water drawn from the hydrant in my own yard was found to contain 86 germs to the cubic centimetre. We have also a number of artesian wells. A sample from one of these contained but 20 microorganisms to the cubic centimetre. The well and cistern water varied, according to the locality from which it was taken, from 14 to 3,200 germs to the cubic centimetre. As those people who have access to the purest supply of their own city are precisely those who use the mineral waters, further comment is unnecessary.

In order to still further satisfy myself about the rôle played by the manipulations of bottling in contaminating the mineral waters above examined, I made a few control experiments.

Two bottles were carefully washed by hand with shot and hydrant water and rinsed three times with changes of clean water from the same source and allowed to drain, in an inverted position, in a room free from dust. A third bottle was boiled for an hour and allowed to drain in the same way. The three bottles were then filled with hydrant water which had been boiled for an hour and allowed to cool while well covered. Bottle No. 1 was loosely stoppered with a conical medicine cork; into the other two large boiled

corks were driven with a corker. All three were allowed to stand in a warm room for five days, at the end of which time their contents were examined by the method above described. No. 1 contained 100,000, No. 2 500,000 germs to the cubic centimetre. The tighter cork of No. 2 had not prevented contamination. The bacteria had, therefore, probably been in the bottle, and did not enter along or through the cork. No. 3 contained 725 microorganisms to the cubic centimetre; as I had carelessly dropped the cork upon the floor, the contamination was accounted for. I repeated the experiment with a fourth bottle, which was treated precisely as the third had been, except that I was more careful with the cork, and examination at the end of six days showed 66 germs to the cubic centimetre.

RÉSUMÉ.

1. The bacteria in bottled mineral waters are probably not derived from the spring, in the majority of cases, but are due to contamination from the bottles and corks, the cleansing methods now in vogue being insufficient to destroy them.

2. Carbonic acid in a bottled mineral water has a powerful inhibitory influence on the development of germs, whether the gas is natural to the water, or has been artificially generated and added to it. When the proportion of CO₂ is 350 cubic inches or more to the gallon, the retarding influence of the gas is very great. It is much less when the proportion is only 250 cubic inches to the gallon. But among every dozen bottles of even the most highly carbonated waters there is at least one which contains more than 250 microorganisms to every cubic centimetre, and ten even out of twelve bottles may be thus contaminated. When the water is charged artificially some time may be given for contamination before such charging is accomplished.

3. Sulphureted hydrogen gas, in the proportion contained in mineral waters, probably has some inhibitory influences on the development of germs, but not to the extent which might be *a priori* expected.

4. As regards freedom from bacterial contamination, most of our native carbonated mineral waters are superior at least to several of the most popular European waters of the same kind.

5. The non-aerated so-called table waters are probably very inferior to ordinary hydrant water.

6. The strongly saline non-carbonated mineral waters are so badly contaminated as to be wholly unfit for internal administration in the form in which they are at present put up, unless the germs are previously destroyed by heating (for two hours at 70° C.—Reinl).

7. In order to bottle at least a non-carbonated mineral water in such a way that it will remain bacteriologically pure for an indefinite period, the bottles should first be boiled or steamed, kept

in an inverted position in a place free from dust until cool, then immediately filled and closed with boiled corks.

CONGRESS.

No.	No. days growth.	No. germs to 1 cm.	Character of Colonies.	Morphology of Micro-organism.
1	13	2		
2	2	2		
3	2	7		
4	3	55		
5	3	63		
6	3	32		
7	3	66		
8	4	19		
9	3	460		
10	4	223	Mostly black, opaque, rounded and elliptical colonies.	Short bacilli with straight ends, 1-1½ m. long and about 1 m. broad; some again as long, the shorter almost square.
12	5	240	Principally very small, circular, transparent, almost invisible colonies.	

HATHORN.

No.	hrs.	No. germs to 1 cm.	Character of Colonies.	Morphology of Micro-organism.
1	16	409,600	Many liquefying colonies.	
2	3	1	Bacteria	
3	3	2	Bacteria	
4	4	93	Two of b. subtilis, others mould fungi.	
5	5	5	1, sarcinae; 2, dark circular discs.	Bacilli 1.65-3.35 m. long and .83-1.25 m. broad, with rounded ends, some pointed, others clubbed, single and in twos, slightly mobile.
6	4	40	Majority are sarcinae.	

GEYSER.

No.	hrs.	No. germs to 1 cm.	Character of Colonies.	Morphology of Micro-organism.
1	2	395	Solid, yellow to brown, well-defined, circular discs, almost homogeneous.	Very sm. bacilli with rounded ends, 1.65 m. long and half as broad, but some no longer than broad, single, very rarely double, no large chains, motionless; about 10 per ct. b. subtilis.
2	5	10		Mostly sarcina, but also some b. subtilis.
3	5	16		Sarcina
4	6	29		B. subtilis, sarcina, and diplococci
5	2	44	Liquefying colonies.	B. subtilis
6	6	13		

ARCADIAN (AERATED).

No.	hrs.	No. germs to 1 cm.	Character of Colonies.	Morphology of Micro-organism.
1	4	37	Sarcina and moulds.	
2	4	7	Mostly moulds.	
3	3	10		
4	4	11		
5	4	7		
6	5	10		
7	3	3		
8	2	334	All moulds.	
9	4	135	Liquefying.	
10	4	37		
11	3	16		
12	2	22		

HENK (AERATED).

No.	hrs.	No. germs to 1 cm.	Character of Colonies.	Morphology of Micro-organism.
1	2	8	Moulds.	
2	3	About 15,000	Small, circular.	
3	3	About 25,000	Small, circular, yellowish-gray, bounded by sharp outline, shaded with short lines.	Strongly curved, active bacilli, 2½ to 3½ m. long and ¾ m. broad, with rounded ends, variously distorted.
4	3	40,500	1. Small, circular and lemon-shaped, well-defined, greenish yellow, very faintly granular. 2. Large, superficial, grayish, kidney-shaped.	1. Small motile bacilli. 2. Bacilli 1½ m. long and ½ m. wide, single and in twos, motionless.
5	3	45,000	Same as 4.	Same as 4.
6	3	27,500	" as 3, also some of 4-2	

EMPIRE.

No.	No. days growth.	No. germs to ccm.	Character of Colonies.	Morphology of Micro-organism.
1	4	410	Principally mould fungi	
2	13	38	Bacteria.	
3	1	9,689	"	
4	3	29	"	
5	2	132	"	
6	4	45	"	
7	3½	242	Mostly solid, some liquefying.	
8	2½	51	Bacteria.	
9	2	6	"	
10	4	125	Light green, circular.	Curved bacilli, alone, also in twos and threes.
11	4	12	Almost all mould fungi.	
12	5	6,103	Mostly small yellowish circular colonies, with sharply defined outline.	Slightly curved bacilli with rounded extremities, 1½-2 m. long, alone and in twos.

EXCELSIOR.

No.	hrs.	No. germs to 1 cm.	Character of Colonies.	Morphology of Micro-organism.
1	5	15	Elliptical colonies.	Sluggish, plump bacilli, generally in twos, round ends, 1.65 m. long.
2	6	31	20 per cent. mould, remainder sarcinae.	
3	5	21	Mostly round, solid dark colonies.	Irregular cocci, single, in zoöglæa; also in short chains of two and three.
4	5	34	Sarcina, also dark colonies of slightly irregular outline.	Diplococci of large oval cocci.
5	4	400		Very small, very active bacilli, rounded or pointed ends, in twos and threes, not equally stained.
6	5	About 50,000	Mostly sm. round white colonies, greenish-yellow under microscope.	Plump bacilli, 1.65 m. long, in twos and threes, sluggish motion.

BETHESDA (AERATED).

No.	hrs.	No. germs to 1 cm.	Character of Colonies.	Morphology of Micro-organism.
1	6	87		
2	4	50	Mostly sarcina.	
3	5	80	Mostly sarcina, a few moulds.	
4	6	4	Irregular, not well-defined, superficial, colorless, transparent.	Bacilli, almost cocci, mostly in twos, sometimes three of varying shapes and sizes in one chain, some rounded ends, some pointed, some wide at one end and pointed at the other.
5	5	106	Small, circular, also a few sarcinae.	Bacilli 2-2½ m. long, ¼ as wide, in twos and threes.
6	5	50	Solid, round, brownish.	
7	3	373	Brownish, coarsely granular, without sharp boundary.	Large bacilli, 3.35-3.75 m. long and 1.25 m. broad, single and in twos.
8	4	26		Sarcina
9	4	43		Sarcina
10	4	28		Sarcina
11	5	23	Yellow, circular.	Bacilli with rounded ends, 2.5 m. long and half as broad, some not much longer than broad.
12	6	155	Liquefying.	Very mobile, short, diplobacilli.

SILURIAN (AERATED).

No.	hrs.	No. germs to 1 cm.	Character of Colonies.	Morphology of Micro-organism.
1	4	5		
2	4	28		Sarcina
3	3	22		B. subtilis
4	3	5		
5	5	507	Round, finely granular.	Bacilli.
6	3	34		

SALUTARIS.

No.	hrs.	No. germs to 1 cm.	Character of Colonies.	Morphology of Micro-organism.
1	3	267	Brownish-yellow, circular, granular.	Bacilli resembling b. subtilis in shape, size and motion, but not growing to such long filaments.
2	4	25		
3	4	21	Moulds and sarcinae.	
4	3	4	Sarcina	
5	4	15	Sarcina and moulds.	
6	3	20	Sarcina and moulds.	B. subtilis.

WHITE ROCK (AERATED).

No.	No. days growth.	No. germs to 1 cu. cm.	Character of Colonies.	Morphology of Micro-organism.
1	4	33	10 per cent. moulds.	Sarcina
2	4	114	Mostly very transparent, almost colorless, circular.	Majority sarcina
3	4	10,678	Almost all large, circular, brownish colonies without well-marked border, but having short hairs projecting into surrounding gelatine.	Mobile bacilli, growing into long threads.
4	2	2,325	Much of gelatine liquefied.	Sarcina
5	3	15		
6	2	About 140		

MANITOU.

1	4	About 1,800	Liquid	Bacilli, 83 m. long and almost as thick; rounded ends, generally as diplococci, quite mobile.
2	5	74		Mostly sarcina lutea
3	4	7		
4	3	About 2,500	1. Great majority sharply-contoured yellowish discs. 2. A number of double-contoured colonies with radiating lines.	Motionless bacilli, 1.66—2.35 m. long and .85 m. thick, with rounded ends, some not much longer than thick, single and in twos; very minute, active bacilli.
5	5	125	Small, circular, liquefying	Short, plump bacilli, with rounded ends, in twos, rarely longer chains; also some threads; swim rapidly through field.
6	3	141	Yellow and brown, slowly liquefying.	Short, plump, diplo bacilli, with rounded ends, centre often unstained, not very active.
7	5	10		Sarcinae
8	2	3,474		
9	2	17	Moulds	
10	3	768	Solid colonies & moulds.	

ROCKBRIDGE ALUM.

1	3	26		
2	4	26		
3	2½	88		
4	2½	19	Half moulds, half solid, one liquid.	
5	5	18	Liquefying	Many sarcinae aurantiace.
6	5	About 5,000		

BLUE LICK.

1	4	488		
2	3	2,267	Elliptical, somewhat irregular.	Plump, somewhat mobile bacilli, in twos and threes, forming zoogleea.
3	4	4,088	About half as in 2; the other half similar colonies.	Same as 2; streptococci in chains of 2-8 links.
4	2	1,000	Many liquefying	
5	3	1,767	Mostly small, white round colonies, greenish-yellow under microscope.	Plump bacilli, 1.66 m. long, in twos and threes, sluggish; also quite a number of sarcinae.

COLFAX.

1	1	2,491		
2	3	141	Bacteria and moulds	
3	2	2,200		
4	2		Principally granular, yellow to brown, circular discs.	Bacilli with rounded ends, mostly single, rarely in twos, never in longer chains.
5	4	100,000	Half sarcina, other half irregular brown solid colonies.	Bacilli, somewhat curved, about size of tubercle bacillus, with clubbed extremities, single and in short chains, extremely active, some shorter and thicker.
6	3	789	Brownish discs and irregular colonies.	Both kinds of colonies consist of short bacilli, not much longer than thick, generally in twos, so active that their shape can hardly be distinguished in hanging drop.

BUFFALO LITHIA.

No.	No. days growth.	No. germs to 1 cu. cm.	Character of Colonies.	Morphology of Micro-organism.
1	3	20		
2	3½	41		
3	5	142	75 per cent. are moulds.	Some sarcina and b. subtilis
4	6	21	25 per cent. are moulds.	Mostly sarcina
5	4	61	Liquefying	Probably all sarcina
6	3	312		

COLUMBIAN.

1	3	1,721	Solid, almost circular, well defined, somewhat darker in centre.	Bacilli, slowly mobile, slightly curved, ends generally pointed, 1.66-3.35 m. long and .85 m. thick, in chains of two and three.
2	2	9,225	Same as 1; also same number of similar colonies.	Same as 1; very small, active bacilli, almost cocci, in twos and also in chains of two and three; also some b. subtilis.
3	3	3,066		
4	2	2,700	About 1 per cent b. subtilis, the others round and elliptical colonies.	
5	4	684	Solid, superficial, greenish-yellow, circular.	Bacilli in twos, 1.66 m. long and half as wide, slowly mobile.
6	4	441	Same as 5	Same as 5

CASTALIAN.

1	3	8,136		
2	2	76,275	Bacteria	
3	1½	36,156	Moulds and bacteria	

CRAB ORCHARD.

1	2	About 150,000	Solid	Short shuttle-shaped bacilli, often in twos, but rarely in longer chains, often with an unstained spot in the center.
2	2	About 150,000	Majority are sharply defined, circular, granular, brownish colonies; also many large superficial, greenish, irregular colonies.	
3	2	About 250,000	Same as 2	Same as 2
4	2	About 150,000	1. Circular, finely granular colonies, darker in center than at edge, slowly liquefying. 2. Very light circular colonies, showing fine concentric lines. 3. Resembling pus corpuscles. 4. Resembling typhoid colonies.	1. Bacilli 1.65 m. long and half as thick, in twos. 2. Bacilli much finer than preceding. 4. Large bacilli of uniform size, 2.5 m. long and 1.2 m. thick, single and in twos, and also in threads of two or three bacilli.
5	2	About 100,000	First two varieties of 4.	First two varieties of 4
6	2	About 100,000	Same as 5	Same as 5

BETHESDA (NON-AERATED).

1	3	About 3,000	Liquefied	
2	2	2,750	Great majority coarsely granular brown colonies, circular, with roughened outlines; many not bacilli.	Motionless threads, 2.5-6.5 m. long and ½ m. broad.
3	3	2,237	Root-shaped bacillus	
4	4	2,400	Many of root bacillus	
5	4	3,000	Root bacillus	
6	3	8,644	Many colonies of root bacillus	

SULPHOLEINIC ACID has been called "poly-solve" by Mr. H. Wilson, of Manchester. This product is produced by the action of sulphuric acid upon any kind of vegetable oil, and when concentrated is a yellow viscid liquid. It is capable of dissolving a large number of organic and inorganic substances, 2 per cent. of sulphur, 3 per cent. of iodoform, 25 per cent. of camphor, etc.—*Pharmaceutical Jour. of New South Wales*.

THE MANAGEMENT OF LARGE HERNIÆ.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1880.

BY J. COLLINS WARREN, M.D.,

OF BOSTON, MASS.

The interest at present felt by the surgical world in the radical cure of hernia is so great, and so many methods of treatment are being brought forward, that it has occurred to me that the grouping together of a number of examples of the extreme degree to which hernia may attain, and to relate my experience in their management, might not be without interest to the members of the Association.

The very large herniæ appear to have a *raison d'être* in each case; that is, the patient usually suffers from some form of disability which prevents him or her from exercising that control over a hernial tumor which an able-bodied and intelligent person is usually capable of doing. In a large number of cases obesity is a predisposing cause, especially in umbilical herniæ in women. A stout, middle-aged, swag-bellied woman who has borne children is particularly liable to this form of hernia. An examination of the abdominal parietes of such an individual will show a large semi-lunar fold running in a sort of festoon across the abdomen and containing at its centre a depression, marking the umbilicus. The size and weight of this fold of skin and adipose tissue must exert a strong traction upon the cicatricial tissues of the umbilicus, and the abdominal parietes at this spot must, therefore, be disposed to yield to pressure, especially if weakened by the distension of numerous pregnancies. In a laboring and ignorant woman a tumor once developed is not likely to grow any smaller, and soon becomes irreducible. If the intelligence of the patient is at all impaired, the conditions for the development of a large hernia become unusually favorable.

The type of man usually afflicted with a large scrotal hernia is two-fold. Either he is a middle-aged active business man, so engrossed with his work or of so careless a temperament as to have neglected his disease until driven to treatment by fear of permanent disability; or he is an old and feeble individual, or so obese as to be unable to manipulate the parts so as to effect a reduction, or with insufficient intelligence to apply and keep in place a truss.

Finally we have children with congenital hernia, whose position in the social scale is so lowly that the little patient has never been able to receive proper care, and an unusually aggravated form of hernia is the result.

The cases which I shall present to you for your consideration represents fairly well each of these types of this affection. No special plan of treatment has been adopted applicable to them all, but each case has received such treatment as the

special conditions governing it seemed to call for. Most of them have, however, had this in common, that a preliminary treatment was applied in all, consisting of pressure, with rest in the inverted position; that is, with the hips raised and the shoulders lowered. The object of this position is to reverse the conditions under which the gradual formation of the tumors occur; that is, pressure and gravity combine now to return the intestine and omentum to the abdominal cavity, as they had before combined to protrude them through the ring. The so-called inverted position is produced by raising the foot of the bed and so arranging pillows and mattresses as to make the ring the highest point of the abdominal parietes. Pressure can be made by sand or shot bags, or by the rubber band or special apparatus devised for the purpose. Usually, however, the position aided by sand bags so greatly reduces the size of the hernia that it can be reduced readily by taxis under ether. When it was not possible to retain the herniæ by any form of apparatus after considerable trial, the radical cure was then attempted.

Case 1.—Large scrotal hernia, twenty-five years' standing.—H. H. R.,¹ 45 years of age, had developed a small hernia during college life, but as it increased very slowly, had used no truss, nor had at first made any systematic attempt to reduce it. At the time I saw him he was exceedingly stout, his greatest weight reaching 340 pounds. The enormous size of the scrotum, a portrait of which, sketched by the patient himself, giving the exact size, I here show you, measuring 17 inches from the base to its most dependent portion, caused, after active exertion, the development of a troublesome eczema. After a hard week's work he would go to bed on Saturday and give the scrotum a chance to recuperate itself until Monday morning. Unsuccessful attempts at reduction had been made in Paris, London and New York, on at least one occasion under ether. On explaining the method of reduction by pressure to the patient, who was a skilled architect, he entered heartily into the plan and a bed was made of special strength and a frame work built around it by his carpenter, with an apparatus for hoisting the hips or body, as might be desired. The foot of the bed was raised, the scrotum was held vertically in a hard rubber splint made for the purpose, and pressure was exerted by shot and sand bags. A rubber bag that could be inflated rigid externally but flexible internally, and exerting a sort of uterine pressure, was made for this case by the Davidson Rubber Company. By the time this bag was ready for use the tumor had been reduced to one-quarter of its original size. The bag having been fitted over the hernia and held in place by bandages, pressure was exerted by water introduced into it, and, at the end of eight weeks, the hernia was reduced. The opening in

¹ Boston Medical and Surgical Journal, March 18, 1880.

the ring had a length of four finger breadths. The patient was not able to use a spring truss, but the hernia was retained with ease by a buckle and strap apparatus. The patient led a most active life after this, going up and down ladders and traveling great distances without any local trouble. He died about five years later of Bright's disease.

Case 2.—Large scrotal hernia, twenty years' standing.—This patient was about 40 years of age, the proprietor of a large factory, and an active business man. The tumor was about the size of an infant's head of six months and irreducible. It was chiefly omental, the amount of intestinal contents being small. A six weeks' rest in the recumbent position, with the foot of the bed raised and pressure with sand bags and occasional use of the rubber bandage, reduced the tumor so much that only one or two large nodules of omentum remained that could not be forced through the ring. Ether was accordingly given, and by vigorous manipulation the lumps were reduced. A truss fitted by Dr. Green, of Leach & Green, has held the hernia perfectly, and the patient has since, during a period of eighteen months, been actively engaged in business.

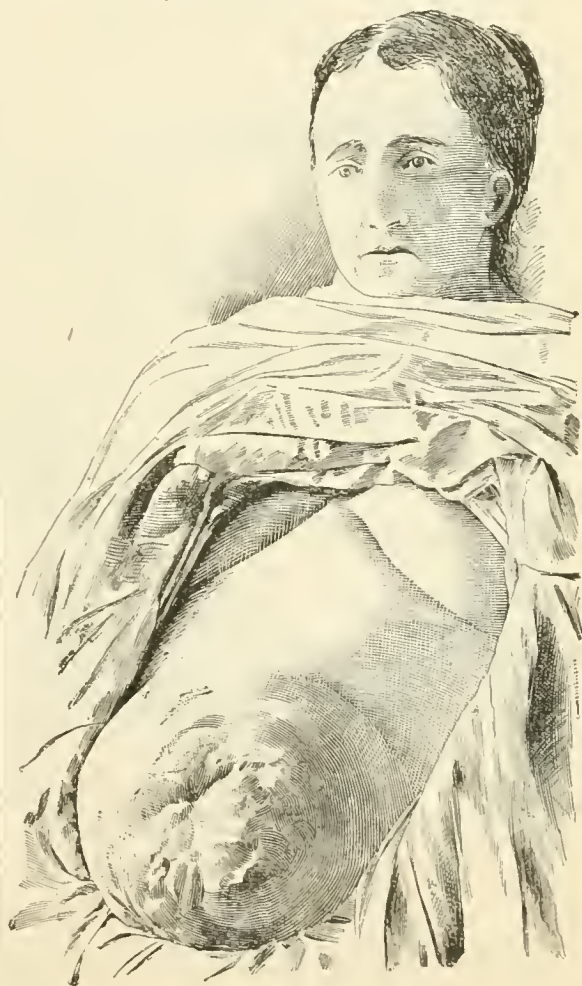
In neither of these cases did it seem advisable to attempt a radical cure. In case No. 1 the large size of the ring, its great depth below the surface, owing to the presence of large masses of fat, and the existence of Bright's disease, were sufficient grounds for not advising an operation. In case No. 2 suture of the rings might have been attempted, but unless I could guarantee a result which would make a truss unnecessary, it seemed to me preferable to try the treatment by reduction with subsequent use of the truss. This has proved so satisfactory that the question of operation has not been raised since.

The following cases show some of the difficulties to be met with in dealing with large umbilical herniæ:

Case 3.—Umbilical hernia; reduction by taxis.—Mary L., 43 years of age, entered the hospital on November 6, 1883. She is very stout, weighing over 200 pounds. A lump has existed at the navel for over ten years. It has increased in size, slowly diminishing at times, but never entirely disappearing. She has now a hernia the size of a small cocoanut, which emerges through an irregular opening apparently just below the umbilicus. Pressure by weight in the recumbent position entirely reduced the hernia, so that a truss could be fitted which held the hernia comfortably.

Case 4.—Large umbilical hernia; operation for radical cure.—Mrs. Rice, 45 years of age, mother of a family and a very large and stout woman, noticed a bunch about the size of a marble protruding from the navel. This gradually increased to the size of a fist, but could be put back. For the last five years the tumor has been irreducible

and has increased considerably in bulk, and the patient has suffered from frequent attacks of abdominal pain, nausea and constipation. On examination a hernia the size of a child's head (8 inches in diameter) was seen bulging from a broad abdominal fold. It was tympanitic and evidently consisted chiefly of intestine. By rest in bed with the foot raised for a month and pressure with sand bags the tumor gradually grew smaller, and finally was reduced by taxis, without ether, through an opening admitting three fingers. The patient was sent home to try the value of a truss. Three months later she entered the hospital for radical cure, as no truss or support could hold the hernia.



Case 4.—Before operation.

A median excision about six inches long laid open the sac. There were numerous bands and adherent masses of omentum, between and around which protruded the intestines. The appendix was adherent to the right wall of the sac and also a portion of the colon. These were dissected off, the bands were divided and portions of the omen-

tum removed. The edges of the ring were brought together with six silk buried sutures, and the opening in the sac was then closed with superficial silk sutures, a small portion of it having been excised. The wound healed by first intention, with the exception of a small tube sinus, which closed at the end of two months. The patient remained in the hospital one month and then returned and kept her bed one month longer. At the end of three months she showed herself and a photograph was taken. A hard, indurated mass covers in and closes the site of the old hernia. There is no expulsive motion in coughing, and the cure appears to be complete. She has worn no retentive apparatus.



Case 4.—Six months after operation.

Twelve months after the operation she was sent for and reported that she had been in perfect health and actively at work—never better for many years; had used no apparatus. A slight return of the hernia was found, of the existence of which the patient was unaware. Since that time has worn an abdominal belt, which prevents the hernia from increasing in size.

Case 5.—Large umbilical hernia; operation for radical cure.—L. S., 60 years old, married, young-

est child 25 years old; stout and unweildy; mental standard not a high one. Entered hospital with an umbilical hernia considerably larger than a child's head. First noticed a rupture at the umbilicus thirty-five years ago, after jumping from a carriage. On examining herself, found a tumor about the size of a fist. Used at times a truss and a swathe. Five or six years ago it began to be very painful, and during the past year has increased rapidly in size. It has never been reduced. Has a history of epileptiform seizures at night. The circumference of the abdomen at umbilicus is 42 inches. The hernial tumor is lax and soft when patient is lying down, and the skin over it at points exceedingly thin. It measures $13\frac{1}{2} \times 14$ inches. After a week's rest in bed with sand bags over tumor the patient was etherized, and after three quarters of an hour's taxis the whole mass was reduced through the ring, which was large enough to admit four fingers. The ring was padded and supported with a large adhesive plaster swathe. During the next two weeks the hernia was controlled by bandages, but it was evident that no truss would hold it, and the patient was accordingly etherized again and the sac laid open. In the interior the bowels were found nested in a large number of pouches. A considerable portion of the ascending colon, with the vermiform appendix, was found pointing in front, with a large portion of small intestines behind it. The appendix was so adherent that it had to be excised, in order to reduce the colon and its appendages so that they would remain without tension within the abdominal cavity. Many bands were divided and fragments of omentum excised. The edges of the ring were then brought together and sutured with six coarse silk sutures. The integuments were then brought together with silk sutures and two drainage tubes inserted. The wound healed apparently by first intention, and there was but slight pyrexia. There was considerable mental disturbance following etherization, and the patient tried to get out of bed the first night. This condition, however, soon passed away, and the wound had apparently healed when an abscess formed in one of the mucous pouches. This was opened, but the fistula has not yet healed, six months since the operation. The patient is about with a large pad over the umbilicus, at which a tumor about one-quarter of the original size presents. An examination shows that the stitches in the ring have yielded.

Case 6.—Double congenital hernia; MacEwen's operation. Chas. Green, 11 years old, small of stature and below average intelligence, entered the hospital April 28, 1888. Six years before had been advised by me to wear a truss, which had been used from time to time with slight success. The photograph gives an inadequate idea of the hernial tumor, which reached one-third of

the distance to the knees when fully distended. The rings were so large that the first finger and thumb of one hand could be introduced into the rings and made to meet easily in the abdominal cavity when the herniæ had been reduced. On May 1st the right hernia was operated upon by MacEwen's method for congenital hernia, *i. e.* a portion of the sac was left behind to form the tunica vaginalis. The wound was closed with a continuous catgut suture and healed by first intention. Three weeks later the other side was operated upon in the same manner. A small sinus remained for a few weeks, which had healed by July 1st. Was discharged without a truss August 1st. On his removal from the convalescent ward he had a urethral calculus and retention of urine at his home, which put the cicatrix to a severe strain, but he went through the ordeal successfully. Examined by me nine months after the operation, a slight return of both herniæ had occurred as the result of falling down the cellar stairs backwards. He still wears no truss, but the hernial tumors are small and do not trouble him. His family having removed to Providence, I have been unable to see him a second time.

Case 7.—Large scrotal hernia in an old man.—The photograph of this case, which I show you, gives a type of a certain class of cases of hernia, easily reducible, but which have been allowed to grow to an enormous size owing to the mentally or physically feeble condition of the patient. The present case is an Italian who does a certain amount of work, but is unwilling to buy a cheap apparatus or put himself permanently under treatment. The hernia is quickly reduced by the patient by catching it between the thighs, which give diffused pressure, when reduction is finally effected by the hands. For this class of cases I am in the habit of advising a large suspensory bandage made of jean cloth, which effectually prevents increase in size, reduces considerably the size of the hernia, and gives the patient a comfortable sense of support. The large size of the ring renders strangulation extremely improbable. These herniæ sometimes are subject to attacks of local peritonitis, but the use of the support is a good prophylactic against this accident.

Case 8.—Large incarcerated hernia reduced by Dr. Warren's method, by C. W. Galloupe, M.D., Harv. 1883, of Lynn, Mass.—My patient is a large-boned, heavy man, 46 years of age. At the age of 17, while in the act of lifting a cask weighing 825 pounds into the rear end of a wagon, his foot slipped a little on the snow, and he felt a sudden stinging pain in the left groin. This pain continued, and at the end of a week or ten days he noticed a swelling in the groin as large as the end of a thimble. He kept constantly at work, however, until at the end of two years his father noticed that he seemed weak and disin-

clined to lift. He then explained the cause of his laziness, and at that time examination disclosed a bunch the size of a hen's egg.

An iron truss was applied by a country practitioner, which was discarded the next day on account of the pain it caused. In five years from the date of injury it had dropped down into the bag, and he was then fitted to a knitted bag, which acted as a suspensory. The rupture had increased constantly but slowly up to a year ago, when it was about the size of a cocoanut. At that time he jumped from a horse-car and felt a sudden yielding, while the rupture doubled in size in an hour's time. Since then it has steadily increased and has prevented him from doing any active work. There has been but little pain, but a constant pull and drag that has made him an invalid and has led him to indulge freely in alcoholic stimulation.

At the time I first saw him, March 28, 1889, the hernia measured $25\frac{1}{2}$ inches in circumference around its base, 30 inches around its largest part, and its length from pubes to center of perineum was 17 inches. It was of the left inguinal variety, but on account of its size, and the fact that it had dissected up the skin from the lower part of the abdomen and from the upper part of the thigh, the ring could not be felt nor the contents mapped out. He was placed supine on a hard bed with the foot elevated 10 inches, the bowels evacuated and the diet restricted to concentrated and digestible foods. At the end of forty-eight hours the œdema of the scrotum had subsided sufficiently to disclose the nature of the contents of the sac. The upper portion contained many coils of gut, while the lower part and the part next the ring were solid and nodular. Efforts at reduction were made and a considerable part of the gut returned. A cotton bandage was then applied in circular turns to form a pedicle to the mass, and three sand bags, of 3 and 5 pounds weight, laid on the top, while a broad sling over the shoulders and around the neck held the mass vertical. On the fifth day the intestine could be all reduced, and the mass measured 21 inches in circumference by 14 in length. The residue was omental, the chief obstacle being a hard, solid cake 4 inches in diameter and 2 inches thick. The ring could be felt easily, admitting three fingers. From the outset the cotton bandage was applied once or twice daily, and after a few days a rubber bandage outside the cotton. No attempt was made to exert pressure by bandaging across the top, as the effect of this was to gradually squeeze the mass out under the ring of bandage and cause the whole apparatus to slip off. For the same reason the sand bags were of but little value, the chief reliance being placed upon daily manipulation to break up the omental lumps and dilate the ring, while the tight circular bandage caused an internal tension which constantly tend-

ed to squeeze out the contents of the sac. No pain was felt at any time unless the rubber bandage was too tight. If applied directly to the skin it would roll up and cut in uncomfortably, so that the following plan was adopted: Ten yards of cotton bandage, 2 inches wide, were wound around close to the abdomen, including the penis and testicles, each turn being wound still closer, so as to form a hard constricting collar about 4 inches wide; outside of this was wound the rubber, being worn about three hours at a time.

On April 14th, the seventeenth day of treatment, while squeezing the omental cake, it seemed to separate on one edge and open out to form a crescentic mass, which was insinuated by its smaller end into the ring and by dint of steady pressure was wholly reduced, exposing an opening through the abdominal wall which easily admitted four fingers. A graduated compress and spica bandage retained the hernia, and two days later the patient was up and around the room with a water-pad truss on. Much difficulty has been found in getting a truss which would retain the omental lumps, but no intestine has escaped since the first reduction. The patient is attending to his daily work and has gained considerable fat since he got up, while the scrotum has shriveled very greatly and the ring has closed up about one-half.

An incarcerated hernia of this size was not a very promising case to undertake, more especially as it had proved itself unyielding to many physicians during the past twenty or thirty years; but having had the satisfaction of tending a number of such cases under Dr. J. Collins Warren, in the Massachusetts General Hospital and in private practice, I was encouraged to try it by his method of treatment. The result shows the value of his method, and the freedom from pain and danger will make the patient readily consent to it.

I regret to say that I have not yet succeeded in effecting a radical cure in any of these cases; but I may add that all the patients have been fully satisfied with the result of their treatment. I would recommend strongly the method of gradual reduction by pressure to the members of the Section. I do not advance it as a new method, for it is in reality exceedingly old, but I don't think physicians generally realize how much can be accomplished by it.

In the large umbilical hernia the failure to get a permanent cure is due, I think, to the neglect to excise the edges of the ring before suturing. In order, however, to bring the different layers of the abdominal walls together, as in a laparotomy, the amount of dissection necessary would have greatly prolonged the operation and might have increased the danger. On another occasion, however, I think I should attempt it even in as complicated cases as these were.

ADVANCEMENT OF THE TREATMENT OF INSANITY DURING THE NINETEENTH CENTURY.

With Notes upon the History of the Treatment of the Insane in Louisiana, up to the Close of the Year 1859.

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THE ADVANCEMENT IN THE TREATMENT OF THE INSANE DURING THE NINETEENTH CENTURY.

Dr. Benjamin Ward Richardson, of London,¹ in a recent article, entitled, "Medicine Under Queen Victoria," dated July 25, 1887, has clearly shown by indisputable facts, that this first great advancement in the science of medicine commenced *practically* in the year when Queen Victoria ascended the throne half a century before, and consisted in the *adoption of the method of treating the insane without violent physical restraint.*

What the practice of medicine in the treatment of the insane had been previous to 1837, it is in this day almost impossible to conceive.

Dr. Benjamin Ward Richardson says:

"There was in it no science and certainly no humanity. I remember perfectly as a youth, climbing the wall of a barn in order to look through a small grated window at a poor lunatic, who for twenty-five years had been chained in one corner of the place, and in that condition had been retained and kept by his relatives as a dog, or other savage animal might have been. He was bedded down in straw just as other animals were, and except that it was put for him on a platter his food was given to him as might have been given to a dog. He took his food in his hands and tore it with his teeth, the idea being that it was not safe to let him have a knife or a fork, or anything more than a wooden spoon as a help for feeding. The people who had this man in charge were not more cruel than the rest of mankind. They labored under the idea that it was for the safety of themselves, and on the whole for the benefit of the insane man that he should be kept as he was kept. Had he been set at large he would have done some mischievous or dangerous thing for which he would have been punished, and for which they would have been responsible. It is true, they might have sent him to a madhouse, but there he certainly would not have been better cared for than at home. He would have been under the rod of strangers, and might have been exhibited as a show to those

¹ The Asclepiad: "A book of original researches and observations in the science, art and literature of medicine, preventive and curable." By Benjamin Ward Richardson, M.D., F.R.S. Third quarter, 1887, page 207. Longmans, Green & Co., Paternoster Row, London; J. Blakiston, Son & Co., Philadelphia, U. S. A.; Cupples, Upham & Co., Boston, U. S. A.

who were curious for strange sights. He might also have been irregularly fed or imperfectly clothed to meet the various seasons. As it was he was kept out of mischief; he did not complain, he gave little trouble, and he was not merely safe himself, but was a safeguard to the lonely home or lodge attached to the barn in which he was domiciled. For strangely enough the poor helpless creature was a terror to the superstitiously wicked, to the prowling vagrant, the thief, the burglar, and the incendiary. When he cried or howled or laughed maniacally, the wicked were alarmed into flight. The notion in those days was also common that the insane at particular times were under the influence of the moon; that lunacy was a lunar problem was indeed a belief as absolute as that the moon itself appeared monthly in definite quarters, and that she governed the tides. This belief is not effaced yet, but so strong was it at the period of which I was speaking—the latter part of the last reign—that the brother of the lunatic, to whom reference was made above, would make his calculations as to the states of mind into which the lunatic would pass by reckonings of the moon, and sometimes it really seemed as if his predictions were correctly cast.

"As an illustration of the barbarities which were practiced in these institutions, my late friend, the distinguished George Cruikshank, gave me this engraving, which he etched in his time from an original drawing by G. Arnald, F. R. A., of a man named William Norris, an insane American, who was riveted alive in iron, and was for many years confined in that state by chains twelve inches long to an upright massive bar, in a cell in Bethlehem Hospital.

"I have no personal recollection of the state of asylums at the first period of the present reign, but I have heard from others much that excites the surprise of the present generation when it is told. The asylums were conducted on the worst and cruelest of systems. All government, if such it may be called, was by force and fear. The insane were looked upon as endowed with superhuman strength and craft, as human machines of great power, cunning and viciousness, uncontrolled by reason or any attribute of common sense. It was but therefore, to keep them at all times under restraint, and to make in some cases the form of restraint unchangeable, permanent and irresistible.

The system of pinioning the insane in so decisive a manner as Norris was pinioned, was probably exceptional, but pinioning in a milder manner was the rule rather than the exception. Manacles attached to the limbs and secured by chains to the bunks or beds in which the insane slept were in common use, and what was called the straight waistcoat by which the upper limbs were kept under bandage, was so universal that

it remains by name a word of reproach towards the violent until the present hour. 'He ought to be put in a straight waistcoat,' is still a frequent vulgar declaration.

"The centrifugal and the centripetal treatment on a wheel were other methods followed out for the management of the insane up to the latter part of the period preceding the Victorian. It had been ingeniously surmised that the amount of blood supplied to the brain could be increased or lessened by placing a living human body on a horizontal plane attached at a right angle to the axis on a large revolving wheel. If the head of the sufferer were placed on the circumference of the wheels, then it was assumed that the blood in the body would be forced into the brain as the wheel went swiftly round. If on the contrary, the sufferer were placed with the head to the centre and the feet to the circumference, the brain would be emptied of blood as the wheel revolved. One of the medical friends of my early days saw this machine in motion, and made inquiries as to the effect it produced. His record in respect to it was, that if the prayers of the sufferers not to be put upon it, their screams on it, and their giddiness and sickness when they came off it, were to be accepted as signs of improvement, then the treatment might be considered to have been of value; but that he could trace out no instance whatever in which any insane person had been cured by the experiment.

"The Rev. Dr. P., is a very learned man, who, in my first days of practice, was a patient under my care, told me that in a great asylum of which he was at one time a governor, the attendants were detected in the act of dressing the insane under a system of the most astonishing kind, called by them 'the long stocking quietner.' When a patient was to be dressed in the morning, the attendant went to the bed or bunk of the victim, passed round his neck a long, soft stocking, and gently, but firmly, twisted the stocking until the throat was sufficiently compressed to produce a temporary asphyxia and insensibility. Then another attendant came, and while this rough anæsthesia was sustained, dressed the semi-suffocated body for the day. The plan on being exposed, was not without its defenders, who urged that the process gave no pain, that it was attended with no bad results, that it saved hours of possible suffering, and that it was humane, because it did away with all necessity of chastisement, with stripes and struggles, and with injuries to the dressers as well as to the dressed.

"These various modes of government of the insane were not confined to those of the insane who were poor, and, if it be fair to use the term, friendless. The rich were shut up in separate houses, large or small, and were subjected to the caprice which the unwatched powerful, almost of

necessity extend to the unprotected weak. Even royalty itself did not escape. From the moment when the unfortunate George III betrayed his insanity in his speech at the opening of parliament: 'My Lords and gentlemen, and woodcocks cocking up your tails,' he shared with his subjects the servitude of the insane. There are some pictures of him extant, showing him during the period of his insanity, which are simply appalling in the misery they exhibit. They are pictures of fear concentrated and abiding, as well as of a mind weakened and feeble. The story so often repeated, that the king while in confinement at Windsor, was chastised into obedience, was largely credited, and was excused as a necessary part of the treatment of the insane. The exhibition of the king by his keepers for gain was not considered at all a detestable measure, and that he received hard usage is, I fear, but too true. While visiting a large asylum in 1860, the proprietors brought to me a man of advanced life, who had been engaged in his zenith as a younger or assistant keeper of the poor king during the pitiful and painful Windsor period, and this man told us that he himself had seen his majesty knocked down for his obstinacy.

"Such is the background of the picture of insanity and its treatment previous to the present reign. I should rather say it is a portion of the background only, for to fill it up entirely would indeed be a task impossible.

"For some time previous to the Victorian era there had been a few good and humane efforts to relieve the insane of a certain amount of the oppression to which they were subjected. Their names in connection with this effort deserves special mention: Pinel, of the Bicetre, in Paris, the Elder Luke, in the retreat of York, and Dr. Charlesworth, in the city of Lincoln, Lunatic Hospital, in which institution the grand final and triumphant experiment of entire freedom of the insane was carried out." (*The Asclepiad*, 3d Quarter, 1887, pp. 207-209.) Dr. Benjamin Ward Richardson concludes his valuable observations on, "The First Advancement, The Treatment of the Insane," in the following words:

"There is nothing more striking in the course of medical science than the improvement of the insane by the abolition of restraint. It may be considered as a complete conversion, extending throughout all our wide confine. It has plauded us first among all nations as physicians of mental disease, and has yielded the best literature on insanity that has ever been produced.

"Strangest fact of all, we have obtained, as an outcome of the system of treatment under the love that casteth out fear, a literature of the insane by the insane, edited, printed I believe, and published by the inmates of the Morningside Asylum in Edinburgh, is one representative of the literature which alone would suffice to illustrate

the success of the instalment of practical medicine in the history of the people living under the sceptre of Victoria." (*The Asclepiad*, 3d Quarter, 1887, p. 214.)

TREATMENT OF INSANE IN LOUISIANA.

Much has been accomplished in the alleviation of the condition of the insane of Louisiana, but much remains to be accomplished, and many abuses, such as those which we have described in the preceding pages, remain to be rectified. We will give no fancy sketches, but will present authentic facts as revealed in official reports, which we have obtained after much careful research.

TREATMENT OF THE INSANE IN NEW ORLEANS, LOUISIANA.

New Orleans was founded about one hundred and seventy-one years ago, but what was the fate of the unfortunate insane during the dominion of France and Spain, and during the early occupation of the United States in the early part of the nineteenth century must remain in doubt and obscurity.

After a careful search we find no authentic records of the early French and Spanish Hospital in New Orleans; they appear to have been removed together with other archives to the respective foreign governments. The following facts are of importance in the light which they throw upon the history of the Charity Hospital of New Orleans, and will serve to aid us in ascertaining as far as possible the material available for the preparation of a history of human efforts towards the proper treatment of the insane in this city.

The Charity Hospital, of New Orleans, commenced its career as a private hospital and continued so from 1779 to 1811, when it was given to the city of New Orleans. In 1830 it became a State institution, and has remained so ever since.

From 1830 to 1840 it was supported by a tax derived from licensed gaming-houses, which was ample for the purpose. In 1846 to 1847, the legislature levied a tax of \$2.50 a head on all immigrants from foreign countries landing from vessels at the port of New Orleans. This income was large, and continued for several years, but it gradually diminished from \$76,000 collected in 1854 to \$14,000 in 1859. It was in consequence of the diminished revenue derived from foreign immigrants, that the Charity Hospital became more and more a burden to the State treasury. It is evident from the preceding facts that the city records of the Charity Hospital date from 1811 and the State records from 1830.

It is evident that the Charity Hospital of New Orleans was occasionally charged with the care of the indigent insane, for we find that in 1843 the number of cases, entered upon the hospital records as due to insanity, was forty-eight with five deaths, twenty-three discharges and twenty

remaining. In 1832 mania is credited with twenty-one cases and seven deaths: melancholia, two cases; monomania, three cases. The records of the hospital are not at this time accessible to the writer—between the years 1833 and 1842—but we have reason to believe that the insane of the city received at different times assistance, either directly or indirectly, through the administrators of the Charity Hospital. In such reports as I have been able to examine, between the years 1832 and 1849, the destructive effects of alcoholic stimulants are well marked. Thus in 1832, thirty-two cases of delirium tremens were entered, with thirteen deaths, seventy-nine cases of intemperance with fifteen deaths. In 1842, mania a potu, 122 cases and twenty-nine deaths, inebriety, forty-six cases, three deaths; 1843, mania a potu, 51 cases, five deaths. In 1846, delirium tremens, 159 cases, twenty-five deaths; mania a potu, sixteen cases. In 1848 delirium tremens 177 cases, fifteen deaths; inebriety fifty-two cases, five deaths, mania a potu eight cases, fifty-nine deaths; intemperance, eighty-four cases; mania a potu, ten cases.

After careful examination of the archives of the Charity Hospital of New Orleans, with the kind assistance of Sister Superior Philomena and Sister Agnes, the following facts were established:

1. The wooden building on the right of the main building on Common street was devoted to the treatment of the indigent insane of New Orleans up to the time of their removal to Jackson in 1848.

2. The lower rooms were used as cells for the violent patients. The third story of this wooden building (now known as the female department on Locust street) was occupied as sleeping apartments by the attendants of the insane.

3. The iron bars remained on the windows of this wooden (Locust street) building of the hospital until 1872, when Sister Agnes had them removed.

4. The insane department of the Charity Hospital was in full operation in 1846, and was visited and inspected in this year by Sister Philomena, on her way to Natchez, Mississippi.

5. It is probable that the report of the division for the insane was for a portion of the time, at least, rendered separately from that of the hospital generally.

I have sought information from all available sources amongst those who have resided in New Orleans during a considerable portion of the present century, and was rewarded by the following communication from Judge Charles Gayarré, the venerable and learned historian of Louisiana:

"NEW ORLEANS, May 8, 1889.

"PROF. JOSEPH JONES, M.D., 156 Washington Ave.,
 "My Dear Sir:—I have understood that before the existence of the insane asylum at Jackson, demented persons, who, before 1848, were not numerous, used to be taken care of at home by their own families, when

this could be done. Otherwise, these unfortunate beings were sent to the Charity Hospital, where, if I am not greatly in error, there was a part of the building appropriated for them. I regret to say this is all I know on the subject.

"I gladly avail myself of this opportunity to renew to you the expression of my high esteem and distinguished consideration.

Very truly yours,

CHARLES GAYARRÉ."

The preceding statement of Judge Gayarré corresponds to all the facts that I have been able to collect with reference to the disposition of the indigent insane in New Orleans prior to the year 1848.

TREATMENT OF THE INDIGENT INSANE IN NEW ORLEANS, LA.

The Legislature of Louisiana in March, 1847, passed "An Act to Establish an Insane Asylum in the State of Louisiana." The asylum was first thrown open for the reception of patients in December, 1848. Previous to this time a portion of the indigent insane were cared for by the Administrator of the Charity Hospital of New Orleans. Upon their arrest the indigent insane were first incarcerated in a building attached to the Parish Prison consisting of a series of ill-ventilated cells, and this continued to be the custom up to the use of the United States Marine-Hospital building as a city insane asylum.

TEMPORARY ASYLUM FOR THE INDIGENT INSANE OF NEW ORLEANS IN 1856.

*Notes furnished by Dr. C. Delére, City Physician, upon the Temporary Insane Asylum in New Orleans.*²—"When Dr. Delére entered upon his duties, December 1, 1856, the asylum contained fifty-six persons; one of them had been there for a year, others for several months. The insane were huddled together in the cells, and they often fought each other at night, and some came forth in the morning with their heads barbarously bruised with the blows they had received.

"Dr. Delére has addressed some petitions to the Common Council to inform them of the abuses which reigned in the asylum. Upon the entry of his duties a lunatic was compelled to undergo a detention of sixty days before he could be conveyed to Jackson. Upon Dr. Delére's demand the Council, some three or four weeks since, adopted a resolution authorizing the City Physician to demand, whenever he should judge proper, the conveyance to the asylum at Jackson of every lunatic sent to the temporary asylum, without the delay which heretofore they have been compelled to undergo at the said temporary asylum.

"The City Physician complains that lunatics, beggars and persons afflicted with delirium tremens, are all sent, without distinction, to the temporary asylum. He deems it a violation of the laws of humanity thus to confound two classes of persons separated by the abyss of insanity.

² New Orleans Med. and Surg. Journal, January, 1858.

"He deems it of the highest importance to expedite as much as possible the conveyance to the Jackson asylum of the insane sent to the temporary asylum, for the hygienic condition of the temporary asylum is entirely unsuitable to the treatment of insanity, whilst the same hygienic conditions at Jackson offer the same advantages; besides, that this last establishment is perfectly prepared for the treatment of this sad affliction.

"The City Physician further thinks that there should be another asylum similar to the one at Jackson, near the city, and for the following reasons:

"1. Since most of the insane are furnished by the city, the proximity of the place will enable the relations to visit them easily and more frequently.

"2. The expense will be much diminished, since the transportation of the insane from the city to Jackson is very expensive.

"3. It will be a source of emulation to the physician at the Jackson asylum, who, instead of being isolated as now and abandoned to his own solitary exertions, will find himself surrounded by *confrères*, with whom he would be enabled to exchange the lights of experience.

"In the present state of things an individual, upon being sent to the *temporary asylum*, is submitted to the examination of the physician of the establishment (the City Physician), who retains him until he has obtained accurate information of his mental condition. He is sent in virtue of an order of a recorder, which order is issued upon the affidavit of any one. If the individual is attacked with delirium tremens only, the doctor retains him and only restores him to liberty when he has perfectly recovered his senses. If he finds that the individual is afflicted with mental alienation, he fills up one of the blanks furnished by the City Attorney, and sends it to the Judge of the First District Court. The Judge then fixes a day for the examination of those designated as insane. The City Physician is summoned, is put upon his oath, and swears that his affidavit (contained in the above mentioned blank form) is true. After this the Judge orders the sheriff to have the insane (who has thus passed through the form of the law) sent to the asylum at Jackson."

Dr. Barkdull, physician of the Insane Asylum at Jackson, wrote in 1857 on this subject:

"The opinion I have formed respecting this prison has not been derived from anybody, or friends of patients, but from a more reliable source than either of these, namely: from the filthy condition in which we receive those who have been confined there any length of time."

156 Washington Ave., New Orleans, La., Aug. 19, 1889.

THE CLINIC.

GYNECOLOGICAL CLINIC.

BY E. E. MONTGOMERY, A.M., M.D.,

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[Reported for THE JOURNAL.]

Carcinoma Uteri.—Mrs. G., æt. 35 years, married, mother of four children, eldest æt. 19, youngest 9 years, no miscarriages. Labors were normal. She has enjoyed excellent health, until within the last two years when she first noticed that her menstruation recurred every three weeks, beyond which she experienced no especial discomfort until last March, when she had a continuous bloody discharge. She then consulted a physician, who found a laceration of the cervix covered with exuberant granulations which he several times curetted preparatory to an operation. She improved for a short time when the condition became more severe than ever, menses were very free and continued for eight days. Within the last two months severe pain began to occur, and was quite severe and lancinating. The character of the symptoms from which she complains taken with the physical signs to be described later, leads us irrevocably to the diagnosis of malignant disease.

Malignant disease occurs with greater frequency in the uterus than in any other organ. In the uterus, the cervix is most usually the seat of origin. This greater relative frequency goes far to confirm the assertion that it originates as the result of some previous injury. The cervix is the natural site of injury during the processes of parturition. This is still more evident, when we consider the infrequency of carcinoma in the uterus of the unmarried female. The disease is most likely to occur between the fortieth and fiftieth years of age, but, in my experience, in the wards of the Philadelphia Hospital, I have seen a number of cases in women between 20 and 40. In these younger cases, the disease seems to have an especial virulence, and is much more rapid in its progress. The period of greatest frequency is that near the climacteric. A patient in good health will notice that her menstrual flow becomes excessive; that it is followed by a thin watery discharge, often quite irritating and having an unpleasant odor, or the menses may have ceased for months or years, and there is a slight return of bloody discharge following coition or some unusual exercise, or the discharge may be quite profuse and the woman thinks she is having a return of the menses. The patient may suffer from severe lancinating pain, or this symptom may be entirely absent. I cannot too strongly impress upon you, the importance of excessive menstruation, or hæmorrhage, at or near the menopause.

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Permit no patient suffering from this symptom to be in doubt as to the possible gravity of her situation, and insist upon the importance of physical examination to determine its cause. Not unfrequently the anxiety produced by such symptoms are lulled with the assurance that it is indicative of change of life and will cease with the menopause. This is a false security and consumes valuable time. Under such a delusion the opportunity for medical relief escapes, and patient and physician awake to find a fatal termination confronting them. Examination of this patient discloses a large spongy mass filling up the vagina; passing the finger about it, nodules are felt upon the vaginal walls and upon all sides. The uterus is quite large, more or less fixed, and indications of involvement of the broad ligaments. As we look at the patient we see a peculiar anæmic appearance, occurs often as combined result of the hæmorrhage discharge, pain and mental distress.

The cachexia is accepted as an indication of systemic infection. It is doubtless due to the absorption of material from multiple abscesses in the degenerated tissues, as the removal of the latter is often followed by a healthy appearance of the skin. The extent of the disease in this woman precludes the possibility of a radical cure. Where the disease is confined to the uterus, however slight, whether confined to the cervix or the body, the only justifiable operation, in my opinion, is the extirpation of the entire organ. Just as we would remove a whole mammary gland, when one of its lobules was diseased, so would I believe the subsequent immunity against relapse greater in carcinoma uteri when the whole organ has been sacrificed.

This operation, however, is only justifiable, when the disease is confined to the uterus, the presence of vaginal involvement, infiltration of the broad ligaments, nodules in the intra-uterine peritoneum, or tissues, would preclude it for the reason that it is not justifiable to subject our patient to a grave operation that affords no hope of a successful result. But the time for the radical cure having gone by for this patient, is there nothing we can do that will afford her an opportunity for prolonged life, for increased comfort?

The patient is now suffering from hæmorrhage, from the drain of a continuous discharge, and from the absorption of septic material. The relief of these symptoms for a time will improve her condition and prolong her life. This we will endeavor to accomplish by scraping, curetting and cutting away the diseased tissue until firm solid tissue is reached. We place the patient in the semi-prone position and insert a Sims' speculum. As I do so, you see this brain-like appearing mass, filling up the vagina. I proceed to scrape this away, using my finger as the safest curette for the reason that I am better able to judge by it the extent of the disease, the amount

of involvement of surrounding parts, and avoid the possibility of opening into an adjoining viscus.

Having completed the removal so far as is possible with the finger, and ascertained that we can safely use the curette. I now use this sharp curette which has, as you see, a hole through its handle, and from this fountain syringe we will keep a current of water playing upon the parts as the curetting is done. By so doing the detritus is continually washed away, and we have the influence of heat, or an antiseptic, upon the denuded surface. With the scissors we now cut away the ragged edges, and I show you the uterus with a funnel-shaped cavity excavated nearly to the fundus. There is considerable oozing from this surface, to control this, and prepare the parts for the next step we apply some pledgets of absorbent cotton saturated with liq. ferri persulph. 1 to water 3, making a firm tampon in the vagina. This tampon will be left 24 to 48 hours and removed, the vagina carefully cleansed and protected by sodii carbonas. 3j, vaseline 3j, and pledgets squeezed dry from zinci chlor. and aq. aa, 3j, applied to the raw surfaces. In the application of this agent, it is extremely important to protect well the vaginal surfaces. The sodii bicarbonas. unguent, is an excellent agent for this purpose. It should be spread over the surface of the vagina and about the vulva. The uterus is exposed by the Sims' speculum and the pledgets applied so as to come in contact with the diseased surface; dry cotton is applied over it and then a large pledget wet with a saturated solution sodii bicarbonas. This agent neutralizes the superfluous caustic and prevents the destruction of the vaginal and vulvar tissues. These applications are removed in twenty-four hours and the vagina syringed several times daily. The slough begins to separate about the third day, and is completely thrown off in from a week to ten days. The extent of the slough will depend upon the amount of the organ involved and the excavation of its cavity. The method of treatment is often followed by most excellent results. The general appearance becomes much improved, the face bright and healthy, the hæmorrhage arrested, the discharge ceases, and pain is lessened. The return of the disease in its active form may be delayed by a suitable regimen and the administration of certain remedies. The diet should promote the nutrition and enrich the blood, as beef, mutton, eggs and milk, in other words an albuminous diet. Of remedies, arsenic, mercury and chian turpentine are most highly appreciated. While I have not had the marked results from the use of the turpentine claimed for it by its special advocate Mr. Clayet, I have seen several cases in which the progress of the disease seemed much less rapid under its use.

MEDICAL PROGRESS.

A COMPARISON OF ANTIPYRETICS.—From a comparison of cases, in which he has carefully tabulated the effects produced, DR. A. CROMBIE, of Calcutta, has reached the following conclusions:

1. As regards efficacy, antipyrin comes first, and there is little to choose between antifebrin and phenacetin.

2. Regarding safety, the advantage lies with phenacetin.

3. As regards rapidity of action, antipyrin, probably on account of its solubility, comes first, antifebrin second, phenacetin third. The fall of temperature after the use of phenacetin is more gradual, and the minimum is not reached for three, four, or even five hours after the administration of the drug.

4. As regards duration of effect, the advantage lies with phenacetin.

5. As regards certainty of action, the order is the same as that of rapidity, *i. e.*, antipyrin, antifebrin, phenacetin.

6. As regards inconveniences in a hot climate, like that of India, phenacetin is followed by just as profuse sweating as that produced by either antifebrin or antipyrin, and this is the great drawback in the use of antipyretics.

Dr. Crombie believes that there are often cases of fever following chill or exposure to the sun when the exhibition of antipyretics is promptly followed by a cessation of all further febrile symptoms. In remittent and continued fevers antipyretics exert no specific action and are, upon the whole, inferior to the cold pack, although there are often practical difficulties in the way of using the pack which render the administration of antipyretics imperative. Hyperpyrexia in itself is inimical to life both by reason of the structural changes which are induced by it, and the disturbances of digestion which occur when the temperature exceeds 103° . Phenacetin excels the other antipyretics in possessing a soothing soporific effect. In heat, apoplexy, sunstroke and hyperpyrexia generally, antipyrin is indicated; in temperatures of 103° to 105° , antifebrin or phenacetin; in temperatures below 103° , preference should be given to phenacetin.—*Indian Med. Gaz.*, July, 1889.

A CASE OF EXTRAORDINARY ELEVATION OF TEMPERATURE.—DR. LORENTZEN (*Cent. für Klin. Med.*, August 17, 1889) reports the case of a married woman, 20 years of age, where the bodily temperature reached the remarkable height of 112.8° . The patient was under treatment for hæmoptysis, but exhibited no other signs of phthisis. She had numerous attacks of dyspnoea, in some of which she became cyanosed and lost consciousness. The attacks were accompanied

by severe pain in the left side on a line with the anterior margin of the axilla, in the fourth intercostal space. There was also a moderate degree of hyperæsthesia in the left ovarian region. There was no cough and no hæmoptysis during the attacks. The attacks themselves generally followed emotional excitement. There were occasional periods of sudden retention of urine, requiring the use of the catheter, but there were no other manifestations of hysteria. On the 9th of January, 1889, when the patient had been under treatment for several months, the reporter found his patient in a feeble condition with eyes closed, face flushed and skin dry, but not very warm. She was slightly delirious and complained of pain in left side and back and of nausea. Dr. Lorentzen measured the temperature in the rectum, allowing the thermometer eight minutes in which to register, when the mercury was found to measure 112.8° . The rectal temperature was again measured, this time with a second thermometer, while the axillary temperature was taken with a third, the results being respectively 112.8° and 112.6° . The pulse at this time was 144, respirations 24. The thermometric measurements were taken with great care and with corrected thermometers. The temperature remained high for several days, after which it dropped to normal. The patient recovered gradually and remains well at date (July, 1889). In default of a more satisfactory explanation the reporter ascribes the elevation of temperature to hysteria.

COMPRESSION OF PULMONARY ARTERY IN THE COURSE OF ACUTE PNEUMONIA.—DR. E. TORDIEU (*Journal de Médecine*, No. 14) records the case of a child, 5 years of age, admitted into hospital for well-marked acute lobar pneumonia of the left upper lobe, who presented a loud systolic murmur in the second left interspace, and traceable toward the axilla. The bruit persisted when the patient was discharged, but so also did the dulness and bronchial breathing at the left apex. The notion of congenital narrowing of the pulmonary artery was unsupported by any collateral evidence, and it was shown that similar bruits have been described which were subsequently proved to have been due to pressure upon the pulmonary artery by enlarged glands or plithisical consolidation. It was therefore surmised that a like causation explained the bruit in this case—a notion which was borne out by the fact that the bruit completely disappeared later, when a soft hæmic apex murmur alone was audible.—*The Lancet*.

ANTISEPTIC PROPERTIES IN HUMAN SALIVA.—From a series of experiments with the saliva of human adults, DR. FLORADIN has found that the sulpho cyanide of potash, which is always present, has decided antiseptic properties.—*Prager med. Wochenschrift*, Aug. 21, 1889.

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SATURDAY, NOVEMBER 16, 1889.

STATE EXAMINATIONS AND SCHOOLS OF
MEDICINE.

There can be little difference of opinion regarding the need for a higher and more uniform criterion of professional attainments than now exists, and few observant men, outside of medical college faculties, will deny the absurdity of allowing possibly incompetent teachers to examine and license the pupils whom they may have faultily or insufficiently instructed. But the search for a practicable method of reform must encounter many difficulties, general or local, inherent in our system of government. In countries where imperial control is exercised over medical education, the prescription of the subjects and sequence of the curriculum, the constant supervision of teaching, and the selection of the fittest to conduct the final examination, are theoretically feasible, and may be made to extend throughout the domain. In America, it is doubtful if national regulations could be legally established, even if there were agreement concerning their desirability, and the chance of improvement must depend on the separate action of geographically continuons, but constitutionally severed States, of whose legislative bodies it is hardly derogatory to say that they are rarely guided by a profound knowledge of the scientific bases of the *ars medendi*, but are usually rather actuated by the hallucination that the sole purpose of the entire faculty of a medical school is to impart to successive classes of unreasoning pupils certain traditional and inflexible dogmata touching the

administration of drugs. At the prompting of this curious misconception, charters have been granted to "homœopathic" and "eclectic" medical colleges; in some instances even wilder therapeutic vagaries have been incorporated with collegiate powers; and as an inevitable result, several schemes for State examinations in medicine have been defeated by the clamor of these one-idea "schools" for equal representation in the examining boards. In New York, which has been one of the greatest sinners in the matter of indiscriminate charters—exerting a severe nominal quarantine against physicians from other States or foreign parts, but leaving it open for any of its own irregular chartered schools to countersign the diplomas of Paris, London, Berlin, or Podunk—a recent convention of the homœopathic fraternity naively resolved that the creation of a State board composed chiefly of "allopathic" examiners would probably lead to the obliteration of homœopathic doctrines, and that a fund should be raised to influence legislators against the passage of any Act tending toward such a disastrous end. With "practical politics" as sponsor for the offspring of the inorganatic alliance between ignorance and law-making, and the "new code" faction officiating as monthly nurse, the rachitic probability of short life does not prevent the cries of the fretful twins from disturbing the peace of the neighborhood; and harassed governors, as well as the perturbed public, may be tempted to administer some "soothing syrup" for the sake of their own quiet. And until the public, including law-makers and governors, shall have learned that there is as great a difference between a medical school and a "school of practice" as there is between a horse-chestnut and a chestnut horse, and that it is worse than folly to attach the adjective, "homœopathic" or "eclectic," to anatomy, physiology, pathology, and the other sciences which constitute a medical education, the one subsidiary chair of materia medica will continue to absorb exclusive attention, and to present a rock whereon all argument will split.

If this mischief making subject, as usually taught, were abolished from all our schools, the sacrifice would be small in comparison with the advantage gained. We say, "as usually taught," for when we smile at the gibberish of the Hahnemannian "symptomen codex," with its "Acon.,

Ars., Bell., Bry.," and so on to the end of the alphabet, we must remember that in our own ranks there are routinists from whom students learn little or nothing of the toxic or physiological action of drugs, but only the empirical statement that quinine is "good" for paroxysmal fever, or that a combination of rhubarb and soda is appropriate in childhood, with a series of arbitrary prescriptions for the names of different diseases. The miscalled chair of "Practice of Medicine" has been modified by the advance of scientific knowledge, until it means to-day the principles of medicine, and its occupant concerns himself much more with pathology and diagnosis than with medicinal treatment, dealing, as the scientific mind must ever deal, with facts rather than with opinions. If the dry bones of "materia medica"—covered only with the mummified integument of imaginary and antiquated "therapeutics"—were laid at rest in a hermetically sealed sarcophagus, and its place ceded to a living pharmacology, teaching the "how" and "why" of toxic or remedial action, the graduate would be enabled to intelligently adapt his treatment to the pathological indications of the case before him, and the squabbling of sects would soon cease. None save unblushing charlatans would venture to object to an examination which should test the candidate's knowledge of general and special pathology and the demonstrable facts of pharmacology, leaving to his own judgment and conscience the practical correlation of the knowledge so displayed; and no prophetic gift is needed to foresee that the requirement of such knowledge would lead to the extinction of "schools" founded solely for the maintenance of visionary theories.

DREAMS.

We have somewhere seen a story of a young mother who, seeing her baby smiling in its sleep, exclaimed: "The little darling! The cherubs are talking to it." "Oh, no mum," replied the nurse, "'tain't the cherubs—it's the colic!" It is to be feared that the progress of science has tended, for the time, to detract from the poetical feeling with which dreams were regarded when they were supposed to be supernatural warnings, portentous of the fate of individuals and of nations. Still, although we may no longer hope to

learn the way to fame and fortune while sleeping off a Christmas dinner, and even the divination of one's future partner for life by dreaming over wedding cake sometimes fails, the mental phenomena of sleep are by no means unworthy of study, not only for their intrinsic interest, but on account of their affinity to the various morbid psychical states.

In the *American Journal of Psychology*, Vol. I, No. 3, MR. JULIUS NELSON gives some of the results of observations made upon himself as a preliminary to the study of the general subject of hallucinations. He says that he possesses the dreamy diathesis in an extraordinary degree, which would certainly seem to be borne out by his statement that he has memoranda of over one thousand dreams per year for the period of more than three years covered by his observations. A prophylactic measure, which he found efficacious against bad dreams in childhood, is curious enough to be quoted: "On composing myself for sleep, the object of a dreaded dream was by voluntary act brought before my mind, and while held there I said mentally, 'Shall I dream of that?' (here visualizing the scene which past dreams had taught me to fear) and then the subject was dismissed with a confidence that I should not be troubled by that dream for that night."

He finds that his dreams may be divided into three distinct classes: The first, which he calls "evening dreams," are only experienced on going to bed in a tired and sleepy condition, without becoming fully awake in the process of undressing. In such circumstances the transition from a semi-conscious state to one of normal repose is marked by a sudden nervous discharge, accompanied by a spasmodic start, which often coincides with the tragic climax of a dream. In the second class, "night dreams," the mind continues to be busied with the ideas and emotions which have engrossed the attention during the day. The third, and by far the most numerous class, "morning dreams," occur after the brain has been refreshed by the night's repose, and "differ from the foregoing classes in the fact that they are new or varied combinations of past mental experience, worked up with great fertility of fancy and multiplicity of transformation."

In compiling his observations he found that the variations in the amount of dreaming on different nights were not altogether irregular, but

presented a certain rhythm, the period of which was twenty-eight days. He also found that sexual excitement, as shown by the frequency of nocturnal emissions, presented a corresponding, though not altogether coincident, periodicity. He is inclined to bring the two facts into relation. A question like this, however, can hardly be decided by observations on a single subject.

HEERWAGEN, in "Philosophische Studien," Vol. V., No. 6, undertakes the investigation of dreaming by the statistical method. He obtained answers to 406 circulars on the following points: Sex, occupation, frequency, vividness and distinctness of recollection of dreams, duration and soundness of sleep, time of day at which intellectual work is most easily performed, nervous troubles, and temperament. Of the persons furnishing the information 264 were men, of whom 151 were students, and 142 were women. The following are his principal conclusions: Women sleep much less soundly than men, and dream much more. Dreams are more frequent in light than in sound sleep. With advancing age, however, while sleep becomes less sound, dreams diminish in frequency. Dreams are more vivid and better remembered in persons who dream frequently. With men, dreaming seems to have no influence on the need of sleep, but women who dream frequently sleep nearly half an hour longer than those who dream seldom. As might be anticipated from the foregoing, those who dream much go to sleep less quickly and are less likely to have unbroken rest than those who dream little. Of the students, 80 per cent. sleep through the night without waking; of the other men, 70 per cent.; of the women, only 43 per cent. Intellectual labor is easier in the morning to those who sleep soundly and dream little. Nervousness is favorable to dreaming, and is more frequent in women. Persons of phlegmatic temperament sleep most soundly and dream least. The author supposes that the reason of the inverse proportion of the frequency of dreams to the soundness of sleep is due to a greater sensitiveness of the brain to internal as to external stimuli.

It is not probable that the subject is by any means exhausted, and the material for further researches is available to almost anyone. It is to be hoped that scientific researches in this field will be less rare in the future than they have been in the past.

EDITORIAL NOTES.

HOME.

LI PO TAI, a Chinese physician, who has resided in San Francisco for thirty years, is said to have a professional income of \$6,000 per month.

THE TRANSPORTATION OF DEAD BODIES.—The Association of Baggage-men, which recently met in Detroit, passed resolutions insisting that all bodies of persons dead from contagious diseases, held for transportation, must be properly prepared for shipment by being wrapped in sheets saturated with mercuric chloride and placed in metallic caskets, to prevent the spread of the disease.

THE COUNTRY DOCTOR is the title of a new journalistic venture to be issued January 1, 1890, under the editorial management of Dr. J. T. McColgan, of Arcot, Tenn.

TO OUR READERS.—Through a mistake in our mailing department duplicate copies of THE JOURNAL of November 9 were sent to some of the members and subscribers. We shall esteem it a favor if those receiving said duplicates will return them *at once*, addressed to the Business Department, 68 Wabash Ave., Chicago, Ill. Write on the outside wrapper from whom returned, and the postage (two cents) will be remitted to the sender.

THE MEDICAL MIRROR.—This is the name of a new monthly medical journal to be published in St. Louis, Mo., the first number of which will be issued in January, 1890. It is to be edited by Dr. I. N. Love, who is already so prominently connected with medical journals that he needs no introduction either to the editors or readers of our prominent periodicals. His name in connection with the *Mirror* is an ample guarantee that its reflections will be at once clear and truthful, and that it will shine by inherent rather than by borrowed light. It will not busy itself about "that long felt want," but will create wants for itself, and in its manner of dealing with these its readers will doubtless find abundant satisfaction. We bespeak for the *Mirror* a generous support on the part of the profession, confident that it will be an honor to medical journalism.

DR. JOHN S. BILLINGS, of Washington, D. C., will deliver the Cartwright Lectures this year. The subject will be "Vital and Medical Statistics."

A NEW MEDICAL COLLEGE BUILDING.—Work has been commenced on a new building for the Medical College of the New York Infirmary for Women and Children, at the corner of Livingston place and Fifteenth street.

DR. H. LONGSTREET TAYLOR succeeds Dr. A. B. Thrasher as Editor of the *Cincinnati Medical Journal*.

NORTH CENTRAL ILLINOIS MEDICAL ASSOCIATION will hold its sixteenth annual meeting in the Congregational Church, LaSalle, Ill., on Tuesday, December 3, commencing at 10:30 A.M. The annual public address will be delivered in the evening by Dr. Henry Ziesing, of Peru, on "Heredity and Adaptability as Factors in Education." This Association embraces several counties and nearly one hundred members. Its meetings of one day and evening only are replete with matters of interest to the general practitioner; its discussions practical and free, and the relations of its members cordial and unreserved. Physicians eligible to membership are invited to unite therewith and contribute papers or clinical reports and present for examination rare and interesting cases of disease or pathological specimens. The Secretary is Dr. Wm. O. Ensign, of Rutland, Ill.

THE HUDSON RIVER STATE HOSPITAL at Poughkeepsie, N. Y., is to be enlarged.

FOREIGN.

SANITARY COUNCIL IN TEHERAN.—The last number of the *Weekly Abstract of Sanitary Reports* issued by the Surgeon-General of the U. S. Marine-Hospital Service, contains the transactions of the Sanitary Council held in Teheran on September 10, and submitted by Dr. W. W. Torrence to E. Spencer Pratt, United States Minister.

It is reported that four Jews, natives of Bagdad, having avoided quarantine, have arrived at Kermansha. They are closely confined and have been forbidden to go about.

Various information received from Khanakin regarding cholera, is reported to have been without foundation and unofficial. Some objection being raised by the European physicians as to the reliability of this report, it was suggested that the Persian consul resident at Khanakin should be the proper informant.

The Turkish physician asked as to state of inhabitants of the country lying between Kerse-ih-

Shirun and Khanakin; that they should be led to hope that something definite was being done for their relief; that it is necessary that four physicians be stationed each at Kerse-ih-Shirun and Kermanshah, two to be engaged attending patients with cholera, and the other two to attend those suffering from other disorders, and perhaps one other to be engaged in superintending quarantine regulations.

A question having been asked by a European physician as to the measures being taken to remove bad odors, his excellency the Nasier el Malk, president of the council, replied that full regulations had been instituted formally for the carrying out of all that is necessary in that respect in quarantine.

The physicians said, in reply, that strict regulations were necessary, and must be carried out wherever cholera exists; that most particular pains should be taken as regards cleanliness and removal of bad odors, the thorough cleansing of houses and thorough fumigation, and that those dying of cholera should be wrapped in cloths dipped in a proper solution of perchloride of mercury. His excellency, the president, replied that as regards cleanliness and fumigation, such orders have and will continue to be given, but that as regards burial and corpses, nothing could be done contrary to the religion and custom of the country.

According to latest reports from Khanakin cholera has increased, and at Bundakauh and on the other side of the river also; that it is very severe in the tribe of Jof and on the increase, many dying daily; that the people are scattered.

In Khanakin, on the 17th of Moharum, six persons died of cholera, on the 18th five. Apparently the disease is milder, but it is reported that the Gaiam-Migom has forbidden any one reporting the number of deaths.

A MEDICAL SERVICE for the Chinese army and navy is to be established.

A NEW OPHTHALMOLOGICAL SOCIETY has recently been established in Paris under the presidency of M. Chevalereau.

THE RIFORMA MEDICA, the Neapolitan daily medical journal, has received the first prize in the Section of Medical Publications at the Exhibition of Hygiene and Medicine, recently held at Padua, Italy.

TOPICS OF THE WEEK.

ANCIENT SURGERY IN GERMANY.

Ambroise Paré, who became a master barber-surgeon in 1536, and died in 1590, has been called the reformer of surgery, and the French claim in particular that their illustrious countryman was the first to apply the ligature to arteries. PROFESSOR EDMUND ROSE, in an address delivered before the "Freien Vereinigung Berliner Chirurgen" May 13 of this year,¹ laid before the meeting a copy of a work dated 1497, by Jeronymus Brunschwyg, a Strassburg surgeon. On page 19 of this work is a colored woodcut of an operation room, with a description of various instruments then in use—the amputating knife and saw, various probes, needles in handles, small hooks for taking up arteries ("damit aufzuheben die Adern"), small and large spatulae, bent to assist in drawing out the ligature ("die do Haar uss ziehen"), etc. Further on the whole *armamentarium* for the extraction of shots or pellets is given. It must be remembered that the arquebuss, the first form of gun fired by a trigger, first came into use about the middle of the fifteenth century. On page 51 are represented six simple trephining instruments.

Professor Rose is troubled because, even in the latest edition of a well-read German surgical work, Paré is still called "the reformer of surgery," whereas his surgery was still "barbaric" when other surgeons had made advances. His oxen with human heads are exactly the same as in Licetus. He was not the first to abandon the old way of treating gunshot wounds (namely, by pouring boiling oil into them), nor did he discover the ligature of arteries, or bring it into general use. Petit, himself a Frenchman, protested against this prevalent idea in the eighteenth century, and at the close of that century Murianna, in Berlin, commended his way of controlling hæmorrhage after removal of the mammary gland. A plug with a complicated dressing was fastened over each separate artery. Jeronymus Brunschwyg's own words run thus: "*Dass ist, so du siehest ein Ader fast pluten, als an dem Hals die Giessader (carotid) oder ein veräundete Pulsader, dass du die Ader heranziehst mit der Nadel und dadurch stichest, und inter Nadeln die Ader zerkniffest mit dem Faden, der do in der Nadeln ist, und dann der Nadeln durchziehst. Und ein Stücklein Fadens an der Ader bleibt hengen, über etlich Tag versuelet das ober Theil des Adern, und geht der Faden heraus.*" [That is, when you see an artery bleeding fast, such as the carotid in the neck, or a wounded "pulse-artery," you draw out the artery with the needle, and thereby penetrate, and tie the artery behind the needle with the thread which is in the needle, and then draw out the needle, and a small piece of thread is left hanging from the artery. After some days the upper end of the artery mortifies (decomposes), and the thread is detached.] These words are plain enough; the man who used them had evidently ligatured arteries himself.

As regards gunshot wounds, old Jeronymus Brunschwyg acted on the sound principle of extreme cleanliness. He spoke of poisoned arrows, etc., just as we, a few years

ago, talked of "infected" wounds without any clear idea of wound diseases. He cleansed the wound with violet or linseed oil (occasionally camphorated), and expressly says "*ein wenig gëwärrt*" (a little warmed). Thus, he did not advocate the use of boiling oil in such cases. Long afterwards Ambroise Paré omitted the use of this latter means of treating gunshot wounds on one occasion, and tells us that he could not sleep that night from anxiety for his patient's welfare. As to washing with goat's milk, this had already been recommended by Henrich von Pfolsprundt in his *Buch der Bündth-Ertzney*, published in 1460. The above fluids were evidently found to be antiseptic, or rather free from noxious germs of their own, hence their proved utility on many a battle ground.

The unguentum elemi has been called the balsam of Arcæus. We find the same balsam in Brunschwyg's work. Here it is spoken of as "that best of all balsams for recent wounds that can be bad, and its like can hardly be found." And again, "it almost makes flesh grow." But, in another place, he inveighs against the indiscriminate use of that "Strassburg balsam, discovered about the year 1460, and now spread abroad throughout all Germany."

Refraction after faulty union of fractured ends of bones has been attributed to a Swabian surgeon of the name of Bosch, who lived in the middle of the last century. This also is bosh. Brunschwyg did the same thing; he either broke the bone across his knee or laid the limb, enveloped in a cloth, across two supports, and trod on it with his naked foot. Extension was effected gradually by screws; that is, in recent cases—old ones were let alone, on the principle, as we are told, that it is "better to be alive and limp, than to die even with a straight limb."

"Window" bandages were recommended for compound fractures and wounds. A "dolt-drunk" was given sometimes to overpower a patient with sleep, so that incisions might be made and a fragment of an arrow, etc., removed without pain. The chief ingredient was opium. Ancient surgery in Germany, to judge of this work, had evidently arrived at a high pitch before Ambroise Paré was born.—*Editorial—British Medical Journal.*

THE HIGH DEATH-RATE IN RUSSIA.

DR. LEINENBERG, of Odessa, publishes in the *Internationale Klinische Rundschau* a lengthy article on the mortality of Russia, which is full of interest for the statistician. He says that in the number of births alone Russia ranks first of all European States, as they annually amount to no less than 48.8 per 1,000 of the population. The latter would consequently grow with abnormal rapidity if an enormous mortality did not make this impossible. This mortality is, according to Janson, 37.3 per 1,000, while the Statistical Central Committee reports it at 36.8 per 1,000. As to the causes of such high figures, Dr. Leinenberg points out that they depend largely on high infantile mortality. He states that 104.8 boys are born to every 100 girls, and that amongst the Jews the proportion of boys born rises to 128.9 for each 100 girls. The mortality of boys, as of the male sex in general, is correspondingly greater than that of the female sex, in the proportion of 36.7 to 35.2. Of 1,000 newly born chil-

dren 263.4 die before they are a year old. This mortality in the first year of infancy is in the province of Novgorod 281 per 1,000, and in the Rusk district of the province of Moscow it reaches the figure of 550.8 per 1,000. Even this enormous number has been surpassed by the town of Irbit, which shows a mortality during the first year of life of 560.2 per 1,000. The provinces of Ekaterinoslaw and Wilno are distinguished by the lowest infantile mortality, the figures mentioned in the report of the Statistical Central Committee being 139.7 per 1,000 for Ekaterinoslaw and 118.9 per 1,000 for Wilno. Comparing the infantile with the general mortality in Russia, the author points to the following two important statistical results: Children up to the fifth year of age form more than one-half of the deaths from all causes. Infantile mortality shows a tendency to increase every year. This great infantile mortality in Russia must be largely attributed to the want of proper diet and of sufficient care, especially amongst the agricultural population. In summer, which is the time when nearly all the children die in the country, the parents are in the fields, leaving their infants at home with no supervision and without sufficient food. This sometimes leads to strange and sad accidents, as in a case mentioned by Giljarowsky, in which pigs devoured the buttocks of a child which had been left alone at home for a considerable period. Griassoff attended a child which under similar circumstances had been attacked by goats and had lost every finger on both hands. Dr. Leinenberg also goes on to speak of the health of those who have passed the crisis of the fifth year. Of 1,568,315 boys born in the year 1858, only 750,622 were alive in 1879, and when out of this number 272,974 were examined for the purpose of military conscription, 58,824 men—i. e. 21.5 per cent.—were found to be suffering from various incurable or chronic diseases, and had consequently to be returned as unfit for military service; so that of all boys born in 1858, 47.8 per cent. reached their twenty-first year, but only 37.6 per cent. preserved good health. —*The Lancet*.

FIFTY YEARS OF COUNTRY PRACTICE.

DR. ALONZO GARCELON, ex-Governor of Maine, is 76 years old, and is still in the active practice of his profession. He this year completes the semi-centennial of his medical career. The *Lewiston Journal* gives us some gossip regarding the doctor's life-work, but particularly about his travels. He estimates that with his horse and chaise he has driven about three hundred and sixty-thousand miles, or fourteen times around the earth. Such an estimate is based on the supposition that he has travelled an average of a little less than twenty miles a day, or seven thousand two hundred miles a year.

This is perhaps, a rather high estimate, but it is quite within the bounds of possibility.

The reflection which occurs to one in contemplating these figures is that an enormous amount of purely mechanical and unproductive labor has to be expended by the country doctor in his daily work. While this time is not by any means all lost, for there is health and mental rest, or, perhaps, productive ratiocination, in a moderate amount of ambulation, yet three thousand miles is too

far for the average man to go with horse and carriage, and expect to do the highest class of work in life.

It is all the more credit to Dr. Garcelon that he has succeeded in travelling pretty nearly as far as to the moon and back, and yet has acquired both political distinction and medical prominence. But the country practitioner most needs a means of locomotion swifter than the horse. Dr. Garcelon in riding his three hundred and sixty-thousand miles has had to give up nearly seven solid years, and twenty years of working days out of his total fifty, simply in riding to his patients and home again.—*Medical Record*.

RESPONSIBILITY OF THE DRUNKARD.

M. MOTEL read a paper on this subject before the International Congress of Psychology recently held at Paris. He said that a man was not responsible for a crime committed during the delirious period of drunkenness, nor when the crime was committed by a man suffering from chronic alcoholism, whose brain has undergone those changes which compromise the regular functions of the organ. The responsibility was attenuated in the cases of those persons naturally of a weak intellect and who take drink badly; it is also extenuated when it has been proved that the man got drunk unintentionally. On the contrary to those who got drunk with intention, and where alcohol was taken to give courage in order to commit a crime, no extenuation should be allowed. In conclusion, the author proposed that in presence of the great increase of alcoholism in France, and the terrible crimes committed under its influence, the government be invited to take steps to guarantee society against criminal dipsomaniacs, and for that purpose to establish special asylums for the treatment of habitual drunkards. The assembly adopted this proposition unanimously.—*Medical Press and Circular*.

THE FRENCH SURGICAL CONGRESS.

The fourth French Surgical Congress was opened on October 7, in the grand amphitheatre of the Faculty of Medicine of Paris, under the presidency of M. Larrey, who succeeded M. Verneuil. About one hundred surgeons, members of the Congress, were present. The President delivered a short address, after which the Secretary-general, Dr. Pozzi, read a list of the names of the officers of the Congress. Among the names of the Honorary Presidents occurs that of Sir Thomas Longmore, of Netley. Several papers were subsequently read. On Tuesday the time of the Congress was chiefly occupied by a well-sustained discussion on the immediate and remote results of operations performed for local tuberculous affections. During the sitting on this day, a fire broke out in the great amphitheatre, and the members had to make a speedy exit. The pictures, tapestries, and hangings, as well as the seats and tables, were burned, and the amphitheatre had a narrow escape from destruction. The fire is said to have been due to the overheating of the *calorifère*. Some of the paintings destroyed represented episodes in the history of medical science, and were very valuable. The damage is estimated at 30,000 francs.

PRACTICAL NOTES.

THE EFFECTS OF THE PROLONGED USE OF ARSENIC.

The effects of the continued use of arsenic have been the subject of so much discussion of late in connection with the Maybrick case, and so many statements have been made by those whom we are unable to recognize as able to speak with authority, that the following expression of opinion from Mr. Jonathan Hutchinson, which we take from the second instalment of his *Archives of Surgery*, will be read by all with interest. He writes: "My experience in its medicinal use has been very considerable, and my impressions as regards its effects when long continued are certainly very different from what we have recently seen so freely expressed. I never knew a patient become fond of arsenic, or experience agreeable effects from its long continuance. On the contrary, nothing but anxiety to be rid of a loathsome skin disease will induce the majority of those for whom it is prescribed to continue taking it. Its general effect if pushed is not to give vigor, but to diminish it, and make the patient feel apathetic and uncomfortable."—*British Medical Journal*.

SULPHONAL.

M. Raymond has recently tested, at the St. Antoine Hospital, the value of sulphonal as a narcotic. Though far from being an ideal narcotic, it proved useful in many cases. It had scarcely any action on the respiratory system; on the circulatory system it had the same influence as sleep when this was natural; the temperature was slightly lowered. The secretion of urine was increased, that of the sweat glands diminished. The tongue and mouth were sometimes dry; occasionally, though rarely, the patient vomited. M. Raymond found that sulphonal was not an anæsthetic; it had sometimes a hyperæsthetic action. Small doses had no influence on muscular contractility; doses of 6 grams were followed by ataxic movements of the limbs. Doses of 1 or 2 grams were safe; women were more easily affected by sulphonal than men. Progressively increasing doses were unnecessary. After a certain time it could be discontinued; sulphonal was superior to morphine in this respect. It was especially useful in insomnia resulting from general debility, neurasthenia and cerebral disturbance; where there was actual cerebral lesion the action of sulphonal was more intense, and in such cases it had to be administered with great care. Sleeplessness from abuse of morphine was relieved by sulphonal; it was also useful in phthisical patients who were rendered sleepless by coughing. It was inert when sleeplessness resulted from rheumatic pains, sciatica, cardiac troubles, also

in Bright's disease and intense dyspnœa. Sleep produced by sulphonal was calm, lasted from six to eight hours, and came on about half an hour or one hour after administration. The disadvantages attending the use of sulphonal were fatigue, giddiness, and sometimes positive vertigo.—Paris Correspondence *British Medical Journal*.

THE COCAINE HABIT.

DR. E. FLETCHER INGALS writes us a note regarding the cocaine habit as follows:

I have just read the article in the *Journal* by Dr. Morgan, on Cocainism, and although much interested in the report of the case, I feel confident that the doctor's conclusion, viz.: "In the treatment, the drug should be immediately and totally discontinued," and his further conclusion that the habit is harder to conquer than any other, are radically wrong.

I have had much experience with cocaine, and have had two cases in which the habit ruined the individual, but in either of these cases, I believe, it would have been an easy matter to withdraw the drug gradually and finally entirely, if they could have been properly cared for. In both of them the drug was gradually reduced without their knowledge, until at last 75 per cent. had been cut off, and this without hardly exciting the suspicion of the patient. If at that point they could have been taken in charge by some authorized friend, the habit could have been easily stopped without distress to the patient. These cases came from my early use of the drug, when I gave the patients a prescription for it, and cautioned them not to use too much. I have learned that it is never safe to prescribe cocaine, for although the habit may under proper conditions, I think, be easily broken, it is more easily formed than the opium, alcoholic or chloroform habit.—*Indiana Medical Journal*.

IS PHENACETIN A REMEDY IN WHOOPING COUGH?

DR. R. HEIMANN, of Lauda, answers the above question affirmatively, having used the drug experimentally in a case in which antipyrin entirely failed. The success was so surprising that he administered the drug in two other cases. It reduced the number of paroxysms, which had been from ten to fifteen per diem, to three, and on some days they entirely ceased, only reappearing at night, when no phenacetin was given. Dr. Heimann gave a boy of 3 years 6 grains in four doses of $1\frac{1}{2}$ grains, a girl of 2 years 5 grains in three doses, and an infant of 7 months 3 grains in four doses, without observing the slightest ill effects. One grain and a half of phenacetin would, on the average, retain its effect for three hours. The author recommends further trials of the drug.—*Lancet*.

SOCIETY PROCEEDINGS.

Tri-State Medical Association.

*First Annual Meeting, held at Chattanooga, Tenn.,
October 15 and 16, 1889.*

In pursuance to a call issued by several Societies of Alabama, Tennessee and Georgia, delegates from these States met in Chattanooga and effected the permanent organization of what promises to be an excellent Association.

FIRST DAY.

The professional part of the proceedings began with *Microscopical Demonstrations* by Dr. Jas. E. Reeves.

DR. W. L. GAHAGAN read a paper on *The Physiology of the Heart and its Valves*.

The paper contained an accurate description of the muscular anatomy, the innervation, the action and the sounds, normal and pathological, of the heart.

DR. DRAKE said that the question "What makes the heart beat?" had not yet been satisfactorily answered, and called attention to the importance of recognizing the differences in the nervous mechanism of the lower and higher orders of animals.

DR. JAMES E. REEVES read a paper entitled *The Importance of the Microscope in the Practice of Medicine*.

Remarks on the paper were made by Drs. W. C. Townes, G. A. Baxter and J. B. Cowan, who all emphasized the importance of microscopical investigations at the bedside. The paper was carefully written and the subject handled in so masterly a manner as to be above criticism.

DR. J. E. PURDON, of Cullman, Ala., reported
A CASE OF FRACTURE OF THE SKULL IN AN OLD
MAN—RECOVERY.

The man was 65 years old, and the interest in the case lay in the fact of recovery at that age from such an extensive fracture. The opening, after the removal of bone, was 3 inches or more. The fracture was over the third convolution. The loss of memory of names was a marked symptom from which the patient had only partially recovered.

The discussion, participated in by Drs. G. A. Baxter, E. T. Camp, W. L. Gahagan, James E. Reeves, J. F. Lynch, J. B. Cowan, P. B. Green, W. B. Wells, Jas. Grange and Frank Trester Smith, was largely on the location of different centres of the brain and the effect and symptomatology when injured, and the use of the trephine.

DR. BAXTER related a case in which there was an anomalous distribution of the anterior branch of the middle meningeal artery, which was wounded while trephining for compression caused by a

blood clot. The hæmorrhage was controlled by pressure, the plug of bone having been inserted in the opening. Later the blood clot broke down and was discharged. There was good union of the plug of bone and full recovery.

DR. ANDREW BOYD, of Scottsboro, Ala., read a paper on

CROUPOUS PNEUMONIA,

in which he briefly reviewed and discussed the etiology at length, holding the view that the disease is due to a specific germ, citing cases to prove his position. He thinks the diagnosis can only be made from physical signs, and that the rusty sputum and herpes labialis are pathognomonic. The disease runs a definite course from seven to fourteen days. He mentions four varieties of treatment: depletory, sedative, stimulating and mercurial; and reasoning from analogy he concludes that the best plan is to keep down the fever and stimulate the heart.

The paper was discussed by Drs. G. W. Drake, Jas. E. Reeves, P. D. Sims, E. T. Camp, J. E. Purdon, C. N. Cooper and J. B. Cowan.

DR. DRAKE called attention to the importance of keeping in mind the difference between fibroid phthisis as sequelæ and croupous pneumonia.

DR. MAX THORNER, of Cincinnati, presented a paper entitled

IMAGINARY FOREIGN BODIES IN THE THROAT.

These were divided into three classes: 1. Cases where something had been removed from the throat but the sensation of a foreign body remained; 2. Cases where the sensation was due to some pathological lesion of the throat; 3. Cases where neither of the above causes exist but where the sensation is either reflex or produced by some remote ailment; as, for instance, indigestion, or where the trouble is purely neurotic. The treatment varies. Some can be persuaded that there is no foreign body there, in some it is necessary to resort to innocent deception. The author cited a case. Pathological conditions, as enlarged tonsils or uvula, varicose veins on the back of the tongue, hypertrophied papillæ or lymphoid nodules on the tongue, should be removed. Inter-current affections should be treated. Cases of a purely neurotic character are rarely permanently relieved.

The paper was discussed by Drs. N. C. Steele, Frank Trester Smith and N. C. Cooper.

DR. SMITH related a case where deception had been unsuccessfully tried, and called attention to the importance of a careful examination for pathological conditions that might account for the sensations, especially local swellings.

SECOND DAY.

DR. J. A. LONG, of Long's Mills, Tenn., read a paper on

TYPHOID FEVER.

The doctor said that the invasion was insidious

during the initial stage; tongue white, smooth and glossy, tip and edges red, trembling when protruded, subsequently many changes, speckled appearance; the pulse dicrotous, in the beginning weak, and this is characteristic of typhoid fever. Headache comes on during the second week and lasts ten days. Rose-colored eruption invariably present; muttering delirium in all forms and cases of the disease. Both infectious and contagious; may be a mixed fever, as he saw in Polk Co., Tenn., without tympanitis but the pulse had a reacting beat. The causes of the disease, filth about old barns and out-houses; diagnosis so easy that there is no disease likely to be mistaken for it when symptoms are well marked, yet there are some cases which do not have well marked typhoid symptoms. There is little doubt that the first cases in a family arise from the influence of infection, and in the later ones the infection acts as a predisposing cause to the contagion of the first cases. He has no faith in the germ theory. It is the fever that kills. The report covers 505 cases with a death-rate of less than 2 per cent. His main reliance in treatment is to combat ulceration of the glands of the small intestines, which is one of the earliest symptoms, by giving turpentine in 1 drop doses every hour. Whether it acts as a diffusible stimulant to slow ulceration, or as a disinfectant, he does not pretend to say.

The paper was discussed by Drs. G. W. Drake, J. E. Purdon, L. P. Barber, W. L. Gahagan, Chas. N. Cooper, R. D. Boyd, Jas. E. Reeves, H. E. McReynolds, C. Holtzclav, J. F. Lynch, J. B. Cowan and Frank Trester Smith, who presented a specimen of ulceration of the intestine.

DR. REEVES said: The paper just read, notwithstanding the long experience and high professional standing of the essayist, is defective in many particulars. As a clinical picture of typhoid or enteric fever it is so faulty, so unnatural, that those familiar with the original would scarcely recognize the specific picture, and I can only account for the warm commendation it has received on the ground that it is not easy to follow the reading of a paper on any subject with such correct understanding of its value as to enable the hearer to discuss it fairly and critically. My excuse for the criticism I shall offer is that for forty years I have been a student of enteric or typhoid fever, and by such training I am able, I think, to compare the picture just presented with one which I myself long ago gave to the profession,¹ and which to-day I could not improve, notwithstanding the greater clinical experience gained in the last twenty-five years.

I do not know a typhoid fever in which the "headache comes on in the second week, a dicrotous pulse during the initial stage without cough

and bronchial râles; muttering delirium in all cases, where cause of the disease is filth about old barns and out-houses, where "*the first cases in a large family arise from the influence of infection, and in the later ones the infection acts as a predisposing cause to the contagion of the first cases,*" and where "ulceration of the glands of the small intestine is one of the earliest symptoms." This is wonderful! He has so far modified the turpentine plan of treatment given by the never to be forgotten master in the theory and practice of medicine, the late Prof. Geo. B. Wood, that he recommends but 1 drop of turpentine every hour "to prevent the ulcers from getting headway." He relies upon this dose of turpentine as a diffusive stimulant, to slow ulcerations or to disinfect microbes! He contradicts himself in some of his statements, *e. g.*, after saying "the diagnosis is plain and easy when the history, symptoms, etc., are studied," he declares "some cases have no well marked typhoid symptoms." Finally, he boasts that his fatal cases have not exceeded 2 per cent. and this is the answer that he himself makes to the question that naturally suggests itself—Were his cases all genuine cases of typhoid fever? I am sorry to have felt myself compelled to make these remarks, but the demands of medical truth are inexorable, and I must beg that my criticisms go on record with the paper.

DR. DRAKE said that the paper contains the most complete pen picture of the disease which had ever been presented to his mind, and barring some confusion in regard to infection and etiology, merited high commendation. Much interest attaches to the paper as being the result of the observation of over 500 cases in a practice of forty-five years in the same locality. Dr. L. gave his own observations of his cases without reference to text-books or the experience of others. Turpentine, quinine, alcohol, milk and home-made beef-tea are the medicines and foods Dr. Drake had used in his practice.

DR. W. C. TOWNES, of Chattanooga, read a paper on

HYPNOTISM AND SUGGESTIBILITY.

Dr. Townes had recently studied the subject of hypnotism in Paris, and claimed that it was a means that had too long been relegated to charlatans. In support of his claim that it should be recognized he cited several cases where patients had been cured by this mysterious agency. He showed that the phenomena of moving tables, etc., are real, that certain of our actions are made unconsciously, dependent upon complicated brain action and also on double personality. Hypnotism is a peculiar psychical state which we are able to create in the subject and which increases his suggestibility. From a medical standpoint the aim is to produce this state, so that suggestion will excite the nervous system to perform acts

¹"A Practical Treatise on Enteric Fever, its Diagnosis and Treatment; being an analysis of 135 consecutive cases derived from private practice and embracing a partial History of the Disease in Virginia." Philadelphia: J. B. Lippincott & Co. Pp. 200. 1859.

that will lead toward a cure. Homœopathy, miraculous waters, granules and Brown-Séquard's elixir of life act by suggestion, often resulting in a cure. The author closed by citing the conclusions adopted by the recent Congress in Paris: that hypnotism should be taught in medical schools, but should be under authoritative administration.

DR. J. E. PURDON, of Cullman, Ala., read a paper entitled

THE SPHYGMOGRAPH AS A NEW REAGENT IN
PSYCHICAL RESEARCH.

Dr. Purdon's paper had for its object the advancement of a claim to the discovery of the fact that psychical influence of one nervous system upon another at a distance, and unconnected by any of the ordinary physiological bonds, could be demonstrated by the aid of the sphygmograph. He claimed to have identified in many instances forced relationships of the pulse tracings from the fact that certain neurotic subjects had departed from their usual trace forms to conform to those of individuals with a more dominant nervous system. Dr. Purdon further argued that this was a first step towards the proof of physical connection between the higher centres of different brains which the progress of modern psychology obliges us to acknowledge, in the face of the now well established fact of psychical community, mind reading, sympathetic sensibility, etc. He argued against the fundamental principles of materialism by falling back upon the possibilities of the infra-conscious intelligence and by regarding mind and matter as but different aspects of the one underlying reality.

These two papers were discussed by Drs. G. W. Drake, James E. Reeves, J. B. Cowan and G. A. Baxter.

DR. DRAKE said: We have heretofore been taught that nerve impulses are confined to the individual in whose organism are contained the cerebro-spinal and ganglionic nervous systems. In Dr. Purdon's paper the startling thought is presented that nerve impulses (or nerve fluid) may escape from the body of one individual and, like electricity, passing through the intervening media, atmosphere or even a stone wall, penetrate the body of another individual. When impulses from the cardiac centres of one person may pass to those of another, or to the nerves leading from them, and so control the pulse as to cause the sphygmographic tracings of the individuals to be essentially identical; when impulses—a current of fluid—as instanced in the cases of the prisoners cited in Dr. Purdon's paper, passed through prison walls and affected individuals in separate cells; this fluid must be more subtle than electricity, since the latter might have shattered the walls, while there was no trace left in the walls by the passage of the nerve influence, but the

doctor shows traces of the sphygmograph claimed by him to have been caused by impulses which passed through the walls. There were peculiar noises in the room when Dr. Purdon made these observations on the three prisoners, like rappings on tables, noises produced by the passage of this subtle fluid (nerve impulse) through non-conducting media which would be encountered here and there in the atmosphere of the room; little thunders, as it were, analogous to the thunder of lightning. Dr. Purdon appears to teach that currents of thought may pass from one brain to another, as in mind reading, and currents of painful impulses from a parturient woman to a sympathetic spectator, and during pregnancy the husband may suffer, by transference, the nausea which belongs to the wife. If Dr. Purdon's theories be true, how may we know that our thoughts are our own and not currents of impulses from the brains of others? This is a legitimate inference from his theories.

As to hypnotism and suggestibility presented by Dr. Townes; the brain centres are kept awake and active by impulses which flow in through the five senses, and also by thoughts or ideas from the mind—a separate existence from matter—impulses may be conducted by nerves to any or all of the brain centres, or subconscious impulses may originate in these centres. Now, then, if these centres, either by impairment of the centres so as not to receive impulses or impairment of the nerves so as not to conduct them, or the shutting off of the stimuli so as not to act on the peripheral terminations of the nerves, the centres thus treated are in a hypnotic state, while other centres may be awake and active. There may be thus localized hypnotism. To become an expert in the practice of hypnotism it is necessary to study the methods of temporarily suspending or retarding the action of the brain centres. If you have to control a normal action in the subject, by the same means you may be enabled to modify an abnormal action which is producing some functional disturbance. The quieting of the fretful babe by the mother's gentle patting and sweet lullaby is due to hypnotism, and later the aches and pains are cured by the mother's kisses—suggestion. The method by suggestion is a species of faith cure and depends in a great measure on the credence of the patient in the promises of the physician. Suggestibility, as I understand it, is a susceptibility to certain psychical influences, and may be increased by the hypnotic state. Hypnotism and suggestibility are old ideas clothed in the habiliments of science. Let us beware how we handle the tool of the charlatan lest we give our endorsement to methods we strenuously condemned in the near past. Psychology is destined to work great revolutions in medicine, but let us take our soundings often as we near shoal waters.

(To be concluded.)

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

New York County Medical Association—The late Professor Alexander B. Mott—A Double Fetus—Podalic Version in Contracted Pelvis.

At the last meeting of the New York County Medical Association Dr. John Shradly read a memoir of the late Professor Alexander B. Mott, which was listened to with much interest, and at its conclusion the following minute was adopted:

In the death of Alexander B. Mott the well-maintained heritage of a name illustrious in the annals of surgery is transmitted to posterity with added memories of good work faithfully done.

Self-reliant, ingenious in device, and exceptionally skilful in execution, his career exemplified the best attainment of his chosen art, and his departure leaves a vacancy long to be deplored.

Sharing the grief of the whole profession which he adorned, this Association desires to record its special regret for the loss of a valued member, and its sympathy with those who mourn not alone for the distinguished surgeon, but for the beloved relative or dear friend.

Dr. Augustin M. Fernandez then presented a specimen of double foetus united at the thorax and upper part of the abdomen, relating the circumstances of its birth, which was attended by himself in September, and giving an admirable *résumé* of the existing knowledge in regard to such monsters and their delivery. The mother, a Cuban lady who was stopping temporarily in New York on her way to the Paris Exposition, was past the sixth month of pregnancy, and when Dr. Fernandez made his first examination he was surprised to find three feet protruding from the os uteri. A physician from the house-staff of the New York Hospital, which was near by, was hastily summoned in consultation, but there was no special trouble in the delivery, though the monster was born dead. One of the children measured 14 inches in length and the other 13½ inches; weight 4¾ pounds. They were both males and well developed, and their faces were turned toward each other. The placenta was delivered twenty-five minutes after their birth, and there was but a single umbilical cord. The uterus contracted well and the mother made an excellent recovery.

This double foetus belonged to the order of symmetrical navel-joined monsters (Fisher), in which the band of union varies from a comparatively narrow band, as in the case of the noted Siamese twins, to complete union of the thorax and a considerable portion of the abdomen. In this instance it involved the sternum throughout and all the upper part of the abdomen, there being but a single liver, which was of large size. Dr. Fernandez, in studying the literature of the subject since he met with this case, has found,

like Playfair, that the authors who have placed on record the birth of double monsters have generally occupied themselves more with a description of the structural peculiarities of the foetuses than with the mechanism of their delivery, so that, although the cases to be met with in medical literature are very numerous, comparatively few of them are of real value from an obstetric point of view. For obstetric purposes Playfair confines his attention to four principal varieties of double monstrosity, which are as follows: 1. Two nearly separate bodies united in front, in a varying extent, by thorax or abdomen (as in the present instance). 2. Two nearly separate bodies united back to back by the sacrum and lower part or the spinal column (as in the case of the "double-headed nightingale," Millie Christine). 3. Dicephalous monsters, the bodies being single below, but the heads separate. 4. The bodies separate below, but the heads fixed and partially united.

The principal paper of the evening was by Dr. George Tucker Harrison, Vice-President of the Association, on "Podalic Version in Contracted Pelvis," and embodying, as it did, the results of careful and accurate observation by an accoucheur of high reputation and widely extended experience, it constituted a contribution of real worth and great practical interest.

Dr. Harrison commenced with a reference to the very vague and indefinite views of the average practitioner as to when forceps, version, craniotomy, Cæsarian section, or the induction of premature labor are indicated in cases of narrow pelvis, and said that this was scarcely to be wondered at, considering the divergence of opinion existing among distinguished authors and teachers regarding the therapeutical doctrines of this condition. From several passages in the writings of the ancient Celsus he thought it was evident that that celebrated author had a knowledge of podalic version, and a passage from Philumenos showed that in head presentations, when these obstacles to the birth occurred, it was practiced by the Roman physicians. With the destruction of the Roman empire its literary and scientific knowledge disappeared, and it was therefore, he said, an inestimable boon that Ambroise Paré conferred on humanity when he rescued this method from oblivion and recommended its use as a conservative measure in dystocia from pelvic contraction.

Having paid a tribute to the zealous and successful labors of de la Motte on behalf of podalic version, he proceeded to speak of those of Sir James Y. Simpson, and designated as epoch-making his writings on this theme. At a meeting of the Obstetrical Society of Edinburgh, held in January, 1887, this distinguished authority had the opportunity of showing to the members a large infant extracted the previous evening by

the operation of turning through a pelvis the brim of which was greatly contracted. Although the child was born dead, the fact that the head had passed the contracted brim undiminished gave him an incitement to further investigations. In writing of this case afterward he said that it was, at the time of its occurrence, one of intense interest to him in two points of view: First, it was the first case in which he or any other accoucheur had ever tried the effects of ether inhalation during labor; second, the case appeared to him to be one of great moment as an opposite illustration of views which he had been previously led to entertain as to the possibility and propriety of substituting, in some instances, extraction by the feet for extraction by the crochet; the delivery of the infant by the hand of the accoucheur, instead of its delivery by instruments; the lateral compression of the child's head by the contracted sides of the pelvis, instead of its more dangerous oblique or longitudinal compression by the long forceps; and, above all, the transient and not necessarily fatal depression of the flexible skull of the foetus for the destruction and necessarily fatal perforation of it.

Simpson thus summed up and recapitulated the advantages obtained by podalic version in contracted states of the pelvic brim:

1. The foetal cranium is of a conical form, enlarging from below upwards, and when the child passes as a footling presentation the lower and narrow part of the cone-shaped head is generally quite small enough to enter and engage in the contracted pelvic brim.

2. The hold which we have of the protruded body of the child, after its extremities and trunk are born, gives us the power of employing so much extractive force and traction at the engaged foetal head as to make the elastic sides of the upper and broader portion of the cone (viz: the bi-parietal diameter of the cranium) become compressed and, if necessary, indented, between the opposite parts of the contracted pelvic brim, to such a degree as to allow the transit of the entire volume of the head.

3. The head, in being dragged downwards into the distorted pelvis, generally arranges itself, or may be artificially adjusted so that its narrow bi-temporal instead of its bi-parietal diameter becomes engaged in the most contracted diameter of the pelvic brim.

4. The arch of the cranium or head is more readily compressed to the flattened form and size required for its passage through a contracted brim by having the compressing power applied, as in footling presentations and extraction, directly to its sides or lateral surfaces, than by having it applied, as in cephalic presentations, partly to the lateral and partly to the upper surfaces of the arch.

Lastly I may add, as a result of the whole

mechanism, that the *duration* of the efforts and sufferings of the mother is greatly abridged by turning, when used as an alternative for craniotomy and the long forceps, and that thereby her chances of recovery and safety are increased.

Simpson's teachings, Dr. Harrison went on to say, met with a hearty reception in Germany, and it was especially through the brilliant and enthusiastic advocacy of these doctrines by Schröder and Gusserow that they received general recognition on the part of the German obstetricians. In England such high authorities as Barnes, Braxton Hicks, Leishman and Duncan had employed version to a greater or less extent, while others equally well known gave the preference to the high forceps operation. In France version had never been a favorite procedure, and especially since the introduction of the Tarnier forceps had it lost ground. In this country version has found comparatively few advocates, except within restricted limits. For the value of their contributions the names of Taylor, Goodell and Lusk were worthy of special mention, and the latter, in his excellent text-book, had discussed the subject in a spirit of judicial fairness.

Dr. Harrison criticized with much vigor the article by Dr. Cameron on "Forceps vs. Version" in the American system of obstetrics, from which he quoted the following passage: "Except in cases of considerable pelvic contraction the forceps operation may be regarded as comparatively harmless in skilled hands, while internal version is always a serious undertaking, involving more or less danger for mother and child, even when performed with the greatest skill. The unpracticed operator is far less likely to do harm with the forceps than with version. Whenever, then, it comes to be a question of choosing between forceps and internal version, the forceps should be selected, unless specially contra-indicated, because the operation will be easier and at the same time safer for the mother and child." More false doctrine, Dr. Harrison thought, could hardly be embraced within the same number of sentences. Schröder had shown in the clearest manner that this putting in contrast forceps and version is an error, and ignores true obstetric relations. When version was still practicable, the forceps was contra-indicated; and when, on the other hand, the forceps was indicated, the time for turning had already passed. The objections to the use of the forceps in high-standing head were mainly twofold. In the first place the forceps grasps the head in the fronto-occipital diameter, so that the tendency is to enlarge the transverse diameters, which have to pass the conjugata, and at the same time to prevent the over-riding of one parietal bone upon the other. In the second place it is not in the power of the forceps to accomplish the inflection of the bones, which is an important factor in the moulding of the head.

The advocates of podalic version in contracted pelvis, he said, were divided into two parties, according as they respectively formulated the therapeutic indications. The one side recommended waiting, so long as the passage of the child's head appears possible and devoid of danger; when further delay is no longer permissible in the interests of the mother, perforation and extraction with the cranioclast in high-standing head; forceps in the case of a living child, after the narrow part has been surmounted; in unfavorable engagement at the brim, fixation not ensuing within a certain period, version and extraction. The other side sought to avoid the possibility of a perforation by a prophylactic version before any symptom of danger threatened the mother. Dr. Harrison said that for years his own practice had been based upon this view, and that he could not earnestly advocate the advantages of this method of procedure. Long ago Simpson had argued that the protraction of labor was, *per se*, dangerous both to mother and child, and that any operation was dangerous and fatal in proportion to the length of time allowed to elapse before the artificial delivery was accomplished. For these reasons he declared that in proportion as turning was practiced earlier, so far would it be attended by greater safety and greater success.

The conditions most favorable for version were, of course, intact bag of membranes and completely dilated os uteri. Often, however, the physician was not called to the case until the membranes had already ruptured, and this might have occurred prematurely. This premature rupture was especially to be regretted in a contracted pelvis, as it rendered the prognosis for mother and child more unfavorable, the explanation being that such an accident is more apt to occur at an early stage of the labor in a narrow pelvis. He fully agreed, therefore, with Nagel in the opinion that in a premature rupture of the membranes version should be undertaken as early as possible, and that we should not wait for full dilatation. It was of the utmost importance, as influencing the result, that the after-coming head should be brought through the pelvis with as little delay as possible, and upon the best method of accomplishing this the views of different authors were at variance. All were agreed, however, that the head must be guided into the pelvis and drawn through it with the chin flexed. The finger in the mouth served mainly to approximate the chin to the breast. A supremely important matter was the pressure from without through the abdominal coverings, traction on the trunk being made by the hand over the nape, according to the Veit method. Dr. Harrison's experience has been entirely in accord with that of Nagel, who suggests the propriety of rotating the chin behind, when still in the inlet of the pelvis, so that

the sagittal suture runs in one or the other oblique diameter. In this way, he said, he had repeatedly accomplished delivery in exceedingly contracted pelves.

In the discussion of the paper Dr. Charles A. Leale described the method he pursued in inducing premature labor and delivering by version in anus where the pelvis was contracted to such an extent that it was not deemed expedient to allow the woman to go to full term; and Dr. Joseph Kercher spoke particularly of the difficulty in correctly estimating the pelvic diameters, stating that he had known good obstetricians to resort to the early use of version or the forceps in cases where the pelvis was in reality of normal size, under the impression that there was present a considerable degree of contraction. In his opinion podalic version was not to be recommended, as a rule, in primiparæ, except the os were well dilated and the membranes unruptured; breech labors being much more dangerous to the latter than to multiparæ.

In closing the discussion Dr. Harrison spoke in deprecation of the emphasis which most of the text-books on obstetrics laid upon the rarity of contracted pelvis in this country as compared with European nations. It was, no doubt, true, he said, that this condition was somewhat less common here than in Europe, but at the same time it was met with with sufficient frequency to make it necessary that every practitioner of midwifery should be fully prepared to treat such cases in the most skilful manner. Personally he had had some terrible experiences with them in this city, and as every one was liable to come across them in his practice, he thought it was a great mistake that the student and young physician should be allowed to get the idea that they were so rare that he need regard the chance of his encountering one as only a remote contingency.

At this meeting, which was the first the Association has held since the long vacation, twenty-nine new members were elected, and a committee was appointed to consider and report upon the best methods of suppressing illegal practitioners and mitigating dispensary abuses in the city of New York.

P. B. P.

Chloroform Accidents.

To the Editor:—I take the liberty of writing you in regard to the article on "Chloroform Accidents" in THE JOURNAL of October 19th.

I have been for many years following the practice there described for prevention of death under anæsthetics, and have over and over again presented it to the profession of this country. First in the *American Journal of Medical Sciences*, April, 1876, on "The Influence of the Injection of Narcotics upon the Anæsthetic Process;" again in "Transactions of the State Medical Society of

Ohio," 1879, in which paper I particularly urged the influence of atropia in sustaining the heart's action; further, in American edition "Holmes' Surgery," and several times in journals.

Now, I do not wish to trouble you, and care little about the *personal* honor of priority in this matter, but think that when a procedure is published as a *good thing*, being so discovered *abroad*, those who have worked at it for many years before in *this country* deserve mention.

In speaking of *priority* of this process, I do not claim *originality*, but only that I have been a persistent and repeated advocate of it. I believe it to be one of the most important and most valuable modifications of the anæsthetic process. Nussbaum first used it. When in Munich, in 1887, I took the trouble to call upon him in reference to it, but found that he never carried it beyond his first essay.

The method was placed upon a scientific basis by Bernard ("*Leçons sur l'Asphyxie et l'Anæsthetic*"), and the results as to death of dogs there given is quite as striking as that in the article you have published.

I am very respectfully and truly yours,
J. C. REEVE, M.D.,
Dayton, O., October 19, 1889.

Tenth International Medical Congress.

To the Editor:—I have received the following letter from Professor Virchow, the President-elect of the next Medical Congress.

Very truly yours,
JOHN B. HAMILTON.

Treasury Department, U. S. Marine-Hospital Bureau,
Washington, D. C., October 30, 1889.

BERLIN, October 1, 1889.

Dear Sir:—The Organizing Committee of the Tenth International Medical Congress is now constituted. I myself am elected President, and Dr. Lassar (Karlstrasse 19, N.W.) Secretary-General. We will be very happy to receive the Transactions of the Ninth International Congress, and we hope to see you and many of your countrymen at the new session.

I am, sir, very sincerely your obedient servant,
PROFESSOR RUD. VIRCHOW.

Holland Claims the Microscope.

To the Editor:—Allow me to call your attention to an error in THE JOURNAL of September 14th, which mistake I have recently seen in one or more other journals. On page 385 of THE JOURNAL, under the caption of "The Tercentennial of the Microscope," you ascribe the invention of that highly useful instrument to a Zacharias Janssen, of Magdeburg, the capital of a Prussian province, Saxony. Zacharias Janssen, to whom belongs the credit of constructing the first *compound* microscope (the simple microscope was known previous to that time), was not a German but a *Hollander*, born and reared in *Middelburg*,

the capital of the province of Zeeland, one of the eleven provinces of the United Netherlands.

Germany and the Germans seem particularly anxious to monopolize the credit of most of the *useful* inventions—now they lay claim to the invention of the microscope. "Honor to whom honor is due."
J. VANDERLAAN, M.D.

Muskegon, Mich., September 14, 1889.

NECROLOGY.

Dr. Isaac E. Taylor.

This distinguished physician, so well known to the medical profession and so highly honored, died at his residence in West Thirty-fifth street, New York City, on the 30th ult., at the age of 77 years. He was from the time of its organization until his death the first and only President of Bellevue Hospital Medical College, and has always been esteemed as one of the foremost promoters of medical education.

About ten days previous to his death he was attacked with acute pericarditis and was confined to his bed. Up to the moment of death he had not been considered seriously ill. While lying in bed and reading from a book his daughter noticed that he suddenly threw his hand over his head, sank into his pillow and in three-quarters of an hour he was dead. Mrs. Taylor died in 1867. Four children—Mrs. Pierre Lorillard, Col. Stewart Taylor, Mrs. Hilliard M. Judge, and an unmarried daughter, are his immediate surviving relatives. His was a well rounded life, full of years, of unusual achievement and of signal honors. To the family bequeathed and to the Faculty of the College, the profound sympathy of the profession will be most freely accorded.

Dr. L. F. Warner.

DR. LEVI FARR WARNER, of Boston, for many years an influential member of the American Medical Association, and in 1874 one of its Vice-Presidents, was born Oct. 25, 1822, at Norwich, Chenango Co., N. Y. He died Oct. 12, 1889, at Boston, two weeks before the completion of his 67th year. Educated preliminarily at the Academy at Mexico, N. Y., he studied for his profession during 1842-3 at Geneva Medical College, and subsequently graduated in 1862 at Lind University, Chicago. He commenced practice at Vienna, at Oneida Co., N. Y., and removed thence to St. Louis, where during the war he was Ass't Medical Examiner for the First District of Missouri. He then came to Boston, and was admitted a member of the Massachusetts Medical Society. He was one of the founders of the Gynaecological Society of Boston, and soon became recognized as of especial skill in the diag-

nosis and treatment of the diseases of women. He conducted successfully a large practice until his death, which was from cerebral hæmorrhagic effusion, the result of an accident.

Though always participating with interest in the discussions at the various scientific societies with which he was connected, he wrote but little, save quite a number of obituaries of deceased members of the American Medical Association. His paper, however, "On the Connection of the Hepatic Functions with Uterine Hyperæmias, Flexions, Congestions and Inflammations" in the Transactions of the American Medical Association for 1878, vol. xxix, exerted a distinct influence towards obtaining in New England a wider respect by general practitioners for the specialty of gynecology, then still upon trial, and at the same time served to curb the somewhat inordinate zeal of a portion of its younger enthusiasts.

The writer of this notice was long associated in practice with Dr. Warner, and the relation was of the most intimate character. From first to last he was always faithful to his duties. Not a shadow of difference ever arose between the two, and there was never an unkind word uttered. Scotch in his parentage, several of the most important traits in his character were doubtless inherited. His father a clergyman, he knew the Scriptures absolutely, and they were ever in his mind. He was Presbyterian from childhood, but towards the end of his life held close relations with the Congregationalists, with whom his lately deceased wife was in communion. He enjoyed in a pleasant way religious controversy, but it was rather as a kind teacher than as an antagonist.

He was one of the most genial of men. Full of anecdote to overflowing, cheerful and merry by nature, he carried comfort to the despondent even when his own disappointments and sorrows, and he had many of them, were weighing most heavily upon him.

He was almost perfection itself in his chosen professional work. Always successful in obtaining the full confidence of a patient, he never proved unworthy. He was untiring, in the most chronic and discouraging cases, to a marked degree. Persistent in following up the instances of this kind that were confided to him, he often produced the most surprising and unexpected cures, restoring women to their full usefulness who had for many years apparently been hopeless invalids. At his funeral there were scores of such, who dated their restoration to domestic happiness and to life itself, a long time back, wholly to him, and so lamented their loss accordingly.

To those who treated him fairly he was devoted in his friendship. He was true as steel, and as gentle as a child. Though naturally sensitive and quick tempered, he was always

ready to make acknowledgements if it should prove that he had been in error. He disliked to have wealthy patients, declaring that in the middle-class one found the most gratitude. To the poor, both in private and hospital practice, he always gave freely of his thought and time, and had he not, besides, contributed much and constantly in other charity, he would have amassed a fortune from his profession.

He has left instead a better legacy, the loving recollection of a thoroughly upright and honest man, a most delightful companion, an always reliable friend, a really good physician. *May he rest in peace.*

H. R. S.

BOOK REVIEWS.

A SYSTEM OF OBSTETRICS. By American authors. Edited by BARTON COOKE HIRST, M.D., Associate Professor of Obstetrics in the University of Pennsylvania, Obstetrician to the Philadelphia and Maternity Hospitals, etc. Vol. II, illustrated with 221 engravings on wood. Pp. xi, 854. Philadelphia: Lea Bros. & Co. 1889.

The second volume of Hirst's splendid System of Obstetrics forms a valuable contribution to the American literature of this subject. In subjects where recent advance has been made, as in the study of the bacteriology of puerperal fever, the more recent views of the authorities are set forth with a minuteness of detail which is nowhere else to be found in obstetrical works. Indeed, were it not for the work of the bacteriologists of the present day, it would be difficult for obstetrical writers to find anything new to offer their readers, and in point of fact some of the recent publications, with all their pretensions, will be found to have made but very little improvement on their editions of a dozen years ago.

Like all works of the character of the one under consideration, there is a lack of consecutiveness and balance in the arrangement and treatment of the several topics, while on the other hand there is a certain advantage in becoming familiar with the views of a number of authoritative writers.

The present volume contains valuable articles by Dr. Theophilus Parvin, on the "Diseases and Accidents of Labor;" articles on "The Forceps" and "Embryotomy," by Dr. E. G. Davis; articles by Dr. Jas. C. Cameron on "The Premature Induction of Labor," and "Version" (would it not have been better to have said the "Induction of Premature Labor?"); an article on the "Cæsarean Operation, Symphysiotomy, Laparotomy and Laparo-Cystectomy," by Dr. Robert P. Harris; "Inflammation of the Breast and Allied Diseases Connected with Childbirth," by Dr. Henry J. Garrigues; "The Etiology of Puerperal Fever," by Dr. Harold C. Ernst;

"Some Complications of the Puerperal State Independent of Septic Infection," by Dr. Barton Cooke Hirst; "Insanity and Diseases of the Nervous System in the Child-bearing Woman," by Dr. Jas. Hendric Lloyd; "The Management and the Diseases of the Newborn Infant," by Dr. J. Lewis Smith; "The Surgical Diseases of Infancy and Childhood," by Dr. Stephen Smith; "Congenital Anomalies of the Eye," by Dr. G. E. De Schweinitz.

It will be noticed that some of these contributions are a little outside the strict limits of obstetrics, but the reader will find that the value of the work to the practitioner has been greatly enhanced by the addition of these excellent chapters.

MISCELLANY.

CHAS. CHADWICK, Ottis R. Wyeth, Louis A. Schoen, Geo. J. Schoen, Chas. F. Hermann, Geo. Eyesell, and Horace L. Roy, druggists of Kansas City, Mo., were recently fined \$500 each and costs for counterfeiting a preparation known as bromidia.

LETTERS RECEIVED.

Dr. H. G. Chritzman, Welsh Run, Pa.; Parke, Davis & Co., Detroit, Mich.; Dr. Ephraim Cutter, Windsor, Eng.; Dr. Charles F. Fisher, Clayton, N. J.; Dr. Anna E. Broomall, Philadelphia; V. R. Donetta, New York; Dr. J. S. Gerhard, Ardmore, Pa.; Thos. Leeming & Co., New York; Lea Bros. & Co., Philadelphia; Dr. H. C. Dalton, St. Louis, Mo.; Dr. H. L. Getz, Marshalltown, Ia.; Dr. John Price, Philadelphia; University of Michigan, Ann Arbor, Mich.; Wm. R. Warner & Co., Philadelphia; Dr. Henry P. Wolcott, Cambridge, Mass.; Dr. G. R. Wells, Gold Hill, Cal.; Dr. Frederick E. Hyde, Whiteboro, N. Y.; Dr. George G. Sabin, Black River, N. Y.; W. P. Cleary, New York; Dr. I. S. Stone, Lincoln, Va.; S. R. Niles, Boston; Henry W. Quin, New York; Dr. Rufus B. Hall, Cincinnati, O.; Dr. J. N. Martin, Ann Arbor, Mich.; Gladstone Lamp Co., New York; Dr. A. T. Cabot, Boston; Dr. S. C. Newman, Pasadena, Cal.; American News Co., New York; Dr. L. C. Moore, Muscatine, Ia.; V. Golder, Charleston, Mo.; Dr. P. Brynberg Porter, New York; Dr. J. M. Bessey, Toledo, O.; G. Putnam's Sons, I. Haldenstein, New York; Peacock Chemical Co., St. Louis, Mo.; Dr. R. M. Jordan, St. Louis; W. H. Shieffelin & Co., New York; Western Reserve University, Cleveland, O.; Dr. N. A. Olive, Meridian, Tex.; Dr. William Perrin Nicolson, Atlanta, Ga.; Dr. A. VanderVeer, Albany, N. Y.; Publishers' Commercial Union, Chicago; Drs. Knode & Gillette, Omaha, Neb.; Dr. J. C. Reeve, Dayton, O.; Dr. Wm. C. Rives, Newport, R. I.; Dr. C. W. Nutting, Etna, Cal.; Dr. A. R. Baker, Cleveland, O.; L. S. Trowbridge, Detroit, Mich.; Dr. Thos. F. Rumbold, St. Louis, Mo.; Dr. R. J. Dungleison, Philadelphia; Dr. W. H. Geddings, Bethlehem, N. H.; A. A. Marks, New York; Dr. H. H. Roedel, Lebanon, Pa.; J. Walter Thompson, New York; Ward Bros., Jacksonville, Ill.; Dr. H. J. Smith, Blackshear, Ga.; W. W. Harner, DeGraff, O.; Rio Chemical Co., St. Louis, Mo.; Dr. Joseph Price, Philadelphia; Dr. G. W. McCaskey, Fort Wayne, Ind.; Dr. J. A. Hinton, Friendship, Tenn.; Dr. Eugene Grissom, Raleigh, N. C.; Dr. G. C. Fisher, Patoka, Ind.; R. W. Gardner, New York; Dr. F. D. Mooney, St. Louis, Mo.; Mrs. J. M. Henry, Rockport, Ill.; Dr. W. W. Landon, Fowler,

Ill.; Dr. DeLaskie Miller, Chicago; Dr. J. Hillmantel, Missoula, Mo.; Battle & Co., St. Louis, Mo.; Lutz & Movius, New York; Dr. Henry O. Marcy, Boston; Dr. Wm. Creighton Woodward, Philadelphia; Dr. C. A. Freeman, Trenton, Mo.; Dr. Geo. A. Dixon, New York; National Medical College, Washington, D. C.; Dr. J. L. Rollins, Auburn, Cal.; Dr. H. C. Dalton, St. Louis, Mo.; Dr. James B. Bullett, New York; Columbus Medical College, Columbus, O.; Dr. J. D. Scouller, Pontiac, Ill.; Dr. J. H. Bennett, Wauseon, O.; Dr. I. S. Stone, Lincoln, Va.; Dr. J. H. Lyon, Roslyn, Wash.; Dr. J. F. Maine, Fort Wayne, Ind.; Dr. E. M. McDonald, Daylestown, Wis.; Dr. David S. Snively, Fort Beunett, Dak.; Dauchy & Co., New York; Dr. H. C. Menam, Salem, Mo.; Dr. E. M. Nelson, St. Louis, Mo.; Dr. C. F. Phillips, Stevens Point, Wis.; Dr. Henry W. Williams, Boston; Dr. Samuel B. Rowe, Rolla, Mo.; Dr. G. S. Franklin, Chillicothe, O.; Dr. S. S. Bishop, Chicago; Dr. Laudon B. Edwards, Richmond, Va.; Charles H. Phillips Chemical Co., New York; Dr. J. L. Rollins, Auburn, Cal.; Dr. K. H. Boland, Atlanta, Ga.; Dr. Joseph Gutz, Florence, Ariz.; Dr. A. J. Sprague, Cleveland, O.; Dr. M. A. Bogie, Kansas City, Mo.; Dr. F. E. Bell, Palmyra, Ill.; Charles Scribner's Sons, New York; Dr. R. J. Dungleison, Dr. Thomas Hay, Philadelphia; Dr. Beugnies-Corbeau, Givet, France; Dr. J. B. Mattison, Brooklyn, N. Y.; D. Appleton & Co., New York; Philadelphia Academy of Surgery; Dr. H. R. Storer, Newport, R. I.; Mariani & Co., New York; John E. Ruebsam, Washington; Canton Surgical & Dental Chair Co., Canton, O.; Drs. Knode & Gillette, Omaha, Neb.; Dr. H. H. Maynard, Los Angeles, Cal.; Dr. B. M. J. Conlin, Alexandria, Dak.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from November 2, 1889, to November 8, 1889.

By direction of the Secretary of War, Major Robert M. O'Reilly, Surgeon, will, at the expiration of his present leave of absence, proceed to Ft. Logan, Col., and report in person to the commanding officer of that post for duty. Par. 6, S. O. 256, A. G. O., November 2, 1889.

Capt. James C. Merrill, Asst. Surgeon, is relieved from duty at Frankford Arsenal, Pa., and ordered to duty at Ft. Reno, Ind. Ter. Par. 6, S. O. 256, A. G. O., November 2, 1889.

Capt. Charles S. Black, Asst. Surgeon, is relieved from duty at Ft. Sidney, Neb., to take effect upon the expiration of his present leave of absence, and will report in person to the commanding officer, Ft. DuChesne, Utah. Par. 6, S. O. 256, A. G. O., Washington, November 2, 1889.

Capt. R. W. Johnson, Asst. Surgeon, granted leave of absence for one month, to take effect on or about November 10 prox. Par. 4, S. O. 110, Dept. of Ariz., Los Angeles, Cal., October 29, 1889.

By direction of the Secretary of War, leave of absence for two months on account of sickness, with permission to leave the Div. of the Missouri, is granted Capt. Junius L. Powell, Asst. Surgeon. Par. 2, S. O. 258, A. G. O., Washington, November 5, 1889.

Lieut. F. J. Ives, Asst. Surgeon U. S. A., granted two months' leave of absence. Par. 3, S. O. 256, A. G. O., November 2, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 9, 1889.

Surgeon B. F. Mackie and Asst. Surgeon Geo. McC. Pickrell, detached from the U. S. S. "Ossipee" and placed on waiting orders.

CORRIGENDUM.

On page 677, last line but one, in THE JOURNAL of November 9, for "gr. T," read gr. j.

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ORIGINAL ARTICLES.

THE SO-CALLED THIRD TONSIL. ITS IMPORTANT RELATIONS TO NASO- PHARYNGEAL AND NASO- AURAL CATARRH.

Read before the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, at Newport, June, 1889.

BY JOSEPH A. WHITE, A.M., M.D.,

SENIOR SURGEON OF THE RICHMOND (VA.) EYE, EAR, THROAT
AND NOSE INFIRMARY.

It would seem to be an unnecessary and superfluous task to present a paper on this subject before an assembly of specialists in nasal, aural and throat diseases, but as all our knowledge in medicine is the result of the aggregate experience of different observers, I would crave your indulgence whilst I add my mite to the general fund.

Much has been written of late years on Luschka's tonsil, adenoid tissue, lymphoid vegetations, etc., and whilst the fact that *deafness* sometimes results, especially in children, from any excessive accumulation of this formation, no particular stress has been laid on the active influence it exerts in the production and aggravation of naso-aural and naso-pharyngeal troubles, even when present in a slight degree only.

Whilst it may be true, as stated by so many observers, that the presence of glandular hypertrophy in the post-nasal space is the frequent result of a previously existing catarrhal condition of its mucous lining, my experience would lead me equally to the opposite conclusion, that the presence of this glandular hypertrophy, however produced, and however little, is an active agent in keeping up a more or less so-called catarrhal condition of the mucous lining of the post-nasal space, and its extensions into neighboring cavities, especially the ear. That this is true of nasal polypi, we all admit. They may be produced by a nasal catarrh, but once there the catarrh cannot be cured without their removal. This holds equally good of hypertrophied *faucial* tonsils even when only moderately enlarged. I have found, if I wish to get rid of a naso-pharyngeal or aural catarrh in the presence of enlarged

tonsils, I must either remove or destroy this hypertrophied tissue as a means to that end. I have often been astonished at the rapid improvement, after this was done, of cases that had previously resisted all methods of treatment.

Even when there is no perceptible enlargement of the tonsils, I frequently find it necessary, as a means to the same end, to destroy what might be called the normal glandular tissue between the pillars of the fauces, especially when there is a constant, or, even occasional exudation of whitish secretion from the follicles, a condition generally known as "chronic follicular tonsillitis." In such cases it is my habit to introduce a fine galvano-cautery point, or chromic acid into the succulated follicle and set up adhesive inflammation.

The rôle played by the tonsils in the human economy is a question in considerable doubt, and the attempt of some writers to show that they are "leucocyte manufactories" has not had the support of demonstrative facts. There is no question of their having *some* function to perform, but we don't know its value or importance. We do know that the decided presence of this glandular tissue, whether faucial, pharyngeal or lingual is nearly always accompanied by some pathological manifestations, and that their absolute destruction is followed by no disaster to the individual, but in a very large proportion of the cases, by decided benefit.

Possibly, the so-called third tonsil plays a more important rôle in the production of aural and naso-pharyngeal troubles, with secondary laryngeal changes and reflex manifestations, than the faucial or lingual tonsils combined.

It is easy to understand how *deafness* may result from any excessive glandular hypertrophy, or, any great development of adenoid tissue at the pharyngeal vault, because it then acts practically as a *direct* impediment to the proper ventilation of the Eustachian tubes. This is sometimes the case, even where nasal breathing along the lower meatus is comparatively easy; but more frequently so, when the hypertrophy or tissue blocks the post-nasal openings as well. I have seen cases, as all of my hearers have also, where the post-nasal space was completely obliterated by masses of soft fungous tissue growing from vault,

back and sides, and projecting below the arches of the soft palate. One would suppose that such a condition of affairs would eventually lead to great and irremediable deafness, if these masses were not soon removed, and it is probable that it *might* do so, but it is not in accord with my experience.

I have seen quite a large number of cases of excessive development of this soft lymphoid tissue in the last ten years, but have never seen but *one case* where it caused marked permanent deafness, and that was in a man 48 years old, from whose history I should conclude that he had been in that condition all his life. The removal of the tissue, and the treatment of the resulting middle ear catarrh very much improved his hearing power, but his deafness was still quite noticeable. The cartilaginous mouths of the Eustachian tubes had been permanently deformed, and the palato-tubal muscles paralyzed by the long continued pressure, and their long inaction.

Paresis of the palate and palato-tubal muscles is one of the results of this condition, and may bring on, independent of any changes in the drum cavity or tube, what Weber-Liel long ago described under the heading of "paretic deafness;" and, the removal of the tissue should be followed by a course of electricity, to restore as far as practicable proper tone to these muscles.

Marked depreciation of hearing is nearly always present in these cases of great development of soft lymphoid tissue, but it is easily remedied by the ordinary treatment of Eustachian and tympanal catarrh, although I doubt if absolutely perfect hearing is ever restored. I have just finished the treatment of a young man 20 years of age, who has been very deaf all his life, from such a blocking up of the post-nasal space, and a three months treatment with removal of the tissue from vault, sides and back of the space has entirely restored hearing, although the resulting naso-pharyngeal catarrh is not yet cured.

We have, however, other forms of hypertrophy of the glandular tissue at the vault and sides of the post-nasal space. Instead of a mulberry looking mass, there may be only a small rounded projection from the vault, or a cone-shaped body with its apex downward, or two rounded lobules at either side with a marked sulcus between them, or several small knob-like outgrowths, or a flat cushion-like mass padding up the vaulted roof into a plane low pitched ceiling, and extending from side to side, and from front to back without obstructing the post-nasal openings. Sometimes these are composed of soft tissue easily removed, and sometimes they are dense and hard.

I have found that the Eustachian tubes are more especially injured by such a tissue when they are of a firm dense consistence than when soft. The resiliency or elasticity of the cartilaginous openings is seriously damaged by the pressure

of these masses, particularly when they extend or grow *above and behind the tubes*, and the invariable accompanying catarrh of the naso-pharynx by extension to the middle ear adds to the impairment of hearing. Such cases I find more difficult of a *restitutio ad integrum*.

It is probable that the percentage of impaired hearing accompanying hypertrophy of the third tonsil is greater than we would suppose, because slight defects of hearing would most likely be overlooked by both patient and physician, and our statistics therefore only include cases where this defect has become clearly noticeable. If aurists would invariably look for such hypertrophy in all cases of middle ear disease, suppurative or non-suppurative; if rhinologists would always test the hearing power carefully, whenever they find such hypertrophy present, we would soon get accurate statistics on this subject.

Since I have made my "self-retaining palate retractor," I invariably use it in examining the post-nasal space of all cases that present themselves for throat, or middle ear troubles, and whenever I find any hypertrophy of the third tonsil I test the hearing with the result of having, at times, found commencing deafness not previously suspected. During the last eighteen months 565 patients have applied at my private office for treatment of naso-pharyngeal and middle ear affections, of whom 197 had disease of the middle ear.

Out of the whole number 134 had hypertrophy of the third tonsil, of whom 62 cases suffered with varying degrees of deafness, *i.e.*, 20½ per cent. of the total number showed such hypertrophy, and a fraction over 30 per cent. of these had middle ear complications.

Of these 134 cases, 29 had very large faucial tonsils, 54 turbinated hypertrophy, 18 deflected septum, 22 secondary laryngitis, 46 voice troubles, 1 had atrophic rhinitis. Nearly one-half were under 21 years of age, and 25 per cent. were over 30.

Cases seen at my clinic at the Richmond Eye, Ear, and Throat Infirmary, are not included in these statistics.

It seems to me that *this proportion of 20 per cent. in the whole number of cases* is a very large one, as compared with the reports of other observers. Possibly climatic influences may have something to do with the development of this form of hypertrophy.

The 30 per cent. of impaired hearing were all decidedly deaf to the watch and low voice, although in some cases the deafness was not noticeable in ordinary conversation.

A point of special interest, in these cases, is the large number of voice troubles and laryngitis resulting from the presence of this form of hypertrophy by lowering the roof of the pharyngeal vault, thus seriously interfering with its function as the resonance space for the voice.

This, of course, is no news to any of my hearers, but I doubt, if we all give this matter the attention it deserves. As far as my experience goes, I find that all persons who use the voice habitually, such as singers, actors, clergymen, lawyers, teachers, etc., have invariably some difficulty in a prolonged use of the voice if there is any thickening of the tissues at the pharyngeal vault, even when of very slight degree. The vaulted shape of this space should be perfectly preserved, and everything removed that alters it in any way if the resonance and timbre of the voice are to be retained.

Fifty-four cases had marked turbinated hypertrophy, and only one *atrophy* of the turbinated tissues, the only case I ever saw in connection with adenoid tissue.

Among my cases of naso-pharyngeal troubles with or without aural complications, I have found that the presence of glandular hypertrophy aggravated the symptoms and caused more excessive and annoying secretion, and that many of them suffered from almost constant *headaches*, especially if engaged in any occupation requiring close mental application. The excessive secretion and the irritation resulting therefrom to the surrounding mucous surfaces, prevents any benefit from local applications, or other treatment, unless the hypertrophy itself is removed or destroyed. In this way the third tonsil has a direct and deleterious influence on any previously existing catarrh of the naso-pharynx, and produces it where it did not previously exist.

It also in the same way *indirectly* produces or aggravates a catarrh of the Eustachian tubes, when its location is such as not to have a *direct* influence on the ear. When the adenoid tissue is present in such quantity as to cause nasal stenosis, so many ill effects result from the obstruction, that all writers are of accord as to the advisability of its removal, merely differing upon the method of operation. It is useless to here rehearse the consequences of neglecting to destroy it, but allow me to mention two results from this stenosis, as affected by the operation for removal of the tissue. One is anterior turbinated hypertrophy, which I find very frequently accompanies it, and which in a larger proportion of cases disappears spontaneously after the post-nasal space has been cleared.

The other is the occasional paralysis of the *alæ* of the nose, the *dilatatores nasi* and the *compressor naris* becoming paretic, probably from non-use; and this result is a serious one, for, if of long continuance, I doubt if it is ever radically cured; at least whenever present, I have found it a serious impediment to the restoration of nasal breathing, even after the nose and post-nasal space were perfectly clear.

But whilst writers are in accord about the removal of the third tonsil, when its hypertrophy

causes nasal stenosis, there seems to be a difference of opinion when this is only of slight degree; some advocating its entire removal; and others, regarding it as a normal appendage with some unknown function to perform, being of the opinion that it is best let alone.

Now, is the third tonsil so-called an essential normal appendage of the post-nasal space, or is its presence a congenital anomaly or the result of changes in the muciparous and follicular glands? I am sure the former question may be answered in the negative and the latter in the affirmative. I regard any tissue of any shape, whether pendent, rounded or flattened, that interferes with the vaulted aspect of the pharyngeal roof, as a congenital anomaly or a pathological formation, that ought to be removed or destroyed, because, even if it has not already brought about some naso-pharyngeal trouble, it will do so, sooner or later.

I so regard it, as, in at least 80 per cent. of the cases that have come under my observation for treatment of such troubles, there was not the slightest sign of any such formation as glandular tissue, the mucous lining of the vault being seemingly intimately adherent to the periosteum of the base of the skull. This mucous membrane has the same minute follicular and muciparous glands as the rest of the mucous lining of the throat, with a special aggregation of them in the location of Luschka's tonsil, so-called.

Any pathological process in these glands may result, as suggested by Dr. Bosworth, in sufficient thickening or hypertrophy, to change a microscopic into a macroscopic condition. The former is the physiological, the latter a pathological state. This process may be arrested with the slightest perceptible enlargement, or, go on to the development of soft fungous masses, adenomatous tumors, or even dense connective tissue growths.

With my self-retaining palate retractor in position, I have made numerous examinations of diseased and healthy post-nasal spaces, to look for some evidence of the *normal third tonsil* as also for the opening or mouth of the so-called *pharyngeal bursa*; as yet I have never found the former except in the pathological conditions referred to, and I have never been satisfied that I have found the latter at all, although I have occasionally seen and treated what might be the inflamed bursa, but which always seemed to me a dependency of the third tonsil and its pathological changes. Hence, I am still a skeptic about these parts being essential, *normal* constituents of the post-nasal space. I know I am a heretic in this respect, but crave that indulgent consideration which all true believers give to heretics on the ground of *invincible ignorance*.

Some twelve years ago in a transient visit to Dr. J. Solis-Cohen, he picked up a pair of post-nasal

forceps that he used for the removal of adenoid growths, and said in answer to some remark of mine about the danger of seizing the wrong tissues, that he considered anything they would grasp as legitimate prey. This statement fully represents my views at the present date, that any tissue at the vault which can be grasped by the cutting forceps should be removed.

I have found beneficial results follow the treatment of cases of post-nasal catarrh, after the ablation of all tissue at the vault, that had previously resisted every application.

In some cases the secretion is small in quantity, but is difficult to dislodge, and forms a small mass immediately at the vault, that soon emits an excessively disagreeable odor, as pronounced as that of *ozœna*.

Such cases I thoroughly cauterize with the galvano-cautery electrodes so as to destroy the glands that secrete the unpleasant exudation—as I find this the only method of doing away with this feature of the case. As to the methods of removal I think it matters very little how it is done, provided it is done thoroughly. Large masses of adenoid tissue are best removed with the galvano-cautery snare or the cutting forceps. So also of the dense hypertrophies spoken of above, but the use of the forceps is quite painful, even with a free application of cocaine.

Smaller hypertrophies, and that smooth mass of tissue so often seen lying in between the Eustachian tubes, and coming down just to the level of the superior arches of the post-nasal spaces, making a low pitched *flat roof* out of the *arching vault*, are best gotten rid of, by burning with the galvano-cautery points, or moxa-electrode, although it can also be partially removed by the forceps.

I have found my palate retractor an enormous help in such work, because the muscular movement of the palate never interferes with a perfect view of the parts whilst operating, and I have never seen a case I could not operate on with its aid, whilst without it I have often been baffled in obtaining a satisfactory view of the parts. In fact all post-nasal operations can be done better and more readily with it than without it, for it is easier to perform any surgical work by sight than to depend merely on the "tactus eruditus." I have latterly been enabled with its help to remove adenoid tissue in children 5 or 6 years of age, under the influence of cocaine instead of giving chloroform as I was formerly in the habit of doing.

CANCER OF TONSIL. REPORT OF CASE AND EXHIBITION OF SPECIMEN.

As malignant affections of the tonsils are comparatively rare, I thought the history of the following case would be of sufficient interest to report.

August 2, 1887, a gentleman, 58 years of age, applied to me for treatment of a throat trouble, which had been annoying him some months. The history he gave showed a gradual enlargement of the left tonsil with occasional pain until he had gotten into the following condition:

He could no longer eat solid food, and could swallow liquids only with difficulty. The pain occasionally was quite severe. His breathing was labored, and when lying down, especially if on his right side, he suffered from attacks of suffocation, that at times were very alarming. His articulation was so imperfect that it was difficult to understand him.

The examination revealed a large tumor springing from the site of the left tonsil, growing downwards so as to press on the epiglottis and almost fill the throat.

A laryngeal inspection showed paralysis of the *right* vocal cord, it being in the cadaveric position.

I removed the tumor by encircling it with a steel wire, and constricted it until its base was squeezed into a small dense pedicle. I then removed the steel wire and completed the operation with the galvano-cautery snare. The relief was immediate, both respiration and deglutition becoming almost normal. When the eschar came away, I destroyed the remains of the base with the galvano-cautery, and repeated this operation several times at intervals of some weeks until the parts had assumed a perfectly normal appearance.

Neither faucial pillar, nor any part except the glandular tissue between the pillars was involved, nor were the lymphatics implicated. The paralyzed vocal cord never entirely recovered.

Six months later I saw him again and there had been no return of the trouble. More than a year afterwards I heard from him, and he wrote that his throat was entirely well.

Part of the growth was sent to Dr. Jno. S. Billings, Curator of the Army Medical Museum in Washington, for examination, and the following report was received from Dr. Wm. M. Gray, the Microscopist: "The specimen of tumor received proves to be an epithelioma of squamous type; it probably started as a *papilloma* and degenerated into an *epithelioma*, as the cells are arranged like those in a papilloma, and are just beginning to infiltrate."

In March, 1889, my patient called on me again, suffering from dyspnea and dysphagia. I found on examination that there had been a recurrence of the growth below and in front of the original site, involving the anterior faucial pillar, the base of the tongue on the left side, the glosso-epiglottic fold and extending down to the lower third of the pharynx. The tumor pressed down upon the larynx, pushing the epiglottis far over to the right side, and almost occluding the opening. He said the trouble had re-appeared about

two or three months previously and had developed with great rapidity.

With my galvano-cautery snare I removed as much of the tumor as possible, especially the portion pressing on the upper part of the larynx. There was great difficulty in encircling it, and I was obliged to resort to transfixion with large needles to enable me to do so. I passed a needle threaded with coarse silk as far back in the base of the growth as possible, bringing it out just in front of the epiglottis.

My cautery wire was attached to the thread and drawn through this opening. I then transfixed the anterior portion with a large needle, leaving it in position. The wire was hooked under each end of this needle passed through the canula, the current turned on and quite a large mass removed. This enabled him to breathe easier and to take nourishment, and in a few days he returned home.

I told him that nothing but palliative measures could be made use of, and that possibly a *tracheotomy would become necessary*. In the latter part of April he returned in great distress, because of the violent pain, and much emaciated and weakened by the recurring and alarming hæmorrhages, and inability to take much nourishment. The growth had not perceptibly increased and the epiglottis was as you see it now. Strange to say up to this time the lymphatics were not involved, the left sub-maxillary gland alone being noticeable to touch. Two days after his entry into the hospital, he died very suddenly of heart failure.

A portion of the growth was sent again to Dr. Billings, and on June the 8th the following report was received from him:

"Dr. Wm M. Gray reports the specimen of tumor sent as a typical hard cancer (scirrhus). He also states that he has re-examined the first specimen sent from the same case, and adheres to his original report of squamous epithelioma."

The points of special interest about the case apart from the rarity of this form of malignant disease of the tonsil, are the development of a typical hard cancer of epitheliomatous structure out of a simple papillomatous tissue, and the fact that there was no implication of the glands of the of the lower jaw and neck even to the last, although all the other signs of malignant disease were present.

DR. D. BRYSON DELAVAN, of New York, said that he believed that the large percentage of cases of adenoid disease found by Dr. White was due to the unusual care exercised by that gentleman in the examination of his cases, and that many cases of slight hypertrophy not usually considered of pathological importance were actually productive of serious results, and therefore to be included. He preferred a solid uvula retractor to

the skeleton instrument presented by the writer of the paper.

DR. JONATHAN WRIGHT said: I have used Dr. White's retractor in perhaps a dozen cases, and, at least in my experience, it has provoked violent constriction of the pharyngeal muscles and made post-nasal examination by mirror very difficult and disagreeable to the patient. Under either I should think it might well be used, as the pharyngeal muscles are more or less paralyzed. My inexperience with the instrument may have been the cause of my failures.

DR. MACKENZIE never uses the palate retractor, although it is easily conceivable that in certain cases its use may be of very great advantage. He has used Wales' method, but finds even by this process there is often gagging and salivation, which interferes with the operation. He asked how the retractor exhibited differed, except in weight, from that invented by Dr. Porcher?

DR. THRASHER: In my operations on children for the removal of the third tonsil I invariably operate under chloroform and without a palate retractor, depending simply on touch. By this means the operation can be safely, easily and rapidly performed.

DR. WHITE, in reply, said that in the remarks made, except in those by Dr. Delavan, no reference had been made to the subject matter of his paper, the other gentlemen having confined themselves to an attack on his palate retractor. As far as he was concerned he preferred to use one, because he thought it easier for him and better for the patient that he should perform his operation with a perfect view of the parts, and not trust to his *dexterity* or his *sense of touch* to avoid an error. It was simply a question of taste, as there was no question of the fact that one could see better with the retractor than without it. In answer to Dr. Mackenzie's question about the difference between his retractor and Dr. Porcher's, he would say that in general principle all were alike, but that his own was lighter and worked in an entirely different way from all others, being adjustable or alterable for each patient, and the projecting bar in front turning out of the way of the operator by a hinge-joint. Moreover, its proper use required some experience in applying it, and with such experience the objection urged against it would probably fall to the ground.

DILATATION OF THE STOMACH IN SYPHILIS.—DR. JULLIEN, of Paris, has observed a number of instances in which dilatation of the stomach developed in tertiary syphilis, and believes that it was in many instances the cause of nervous symptoms which were usually attributed directly to syphilis. Large doses of the iodide of potassium are, he thinks, not infrequently the cause of the dilatation.

DISCUSSION ON "THE INDICATIONS FOR, AND DURATION OF, THE TREATMENT OF SYPHILIS."

Read in the Section of Dermatology and Syphilography, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

The chairman, DR. BULKLEY, opened the discussion with a brief paper on

THE INDICATIONS FOR AND THE DURATION OF THE TREATMENT OF SYPHILIS.

The subject selected for our discussion this afternoon is one of very great practical interest, and one upon the decision of which, in individual cases, the very gravest consequences may rest. It is one which the physician cannot shirk if he would, and one upon which it often becomes his serious duty to decide and insist, even against the will of the patient. No one can tell what results may follow to the patient or others from an imperfect treatment of syphilis, and no one can measure the amount of harm which may be escaped by the intelligent and faithful performance of duty toward one who has become infected with syphilis.

The subject, together with the side issues to which it might lead, such as the innocent acquiring of syphilis, marital syphilis, hereditary syphilis, etc., is such a great one that it cannot by any means be compassed in a single discussion, much less can I attempt any considerable consideration even of its salient points. The most that I can hope for, in the brief time which should be taken by one opening the discussion, is to suggest certain points and lines of thought along which we may proceed, leaving the background to be filled by others.

Syphilitic infection takes place from the moment when the syphilitic virus is implanted upon a surface bereft of its epidermis or epithelium; or, in other words, as soon as the poison can be reached by absorbing tissue. It is not necessary for our discussion to consider, or even to know exactly, in what manner the infective material is taken up, although it probably enters the lymphatics at once; it is sufficient for our purpose to know that when once the virus has entered the system, the person is syphilitic, and if the course of the disease is not influenced by extraneous forces it will, in the large proportion of cases, develop in a certain manner, and run a more or less definite course, the natural history of which is now pretty well known and described. This course, beginning with the chancre or primary lesion, and followed by the various later manifestations, known as secondary and tertiary lesions, may extend over many years, and may result in greater or less permanent damage to the individual, and in addition may and does in certain cases destroy life.

In addition to the personal distress and danger

to the person affected, we have also to consider the serious risks which are continually run from the infective nature of the disease, both in the more commonly thought of venereal contact, and also in the innocent relations of family, social, and industrial life; as well as in the matter of hereditary transmission, which is almost sure to occur during a certain period or stage of the disease. Unfortunately, the exact duration of this infective period is unknown, for although in many cases it seems to terminate in two or three years, in other instances the disease has been communicated from one to another even after the lapse of many years. Syphilis can be transmitted hereditarily long after its contagiousness appears to have ceased in other directions, and, as far as I know, no limit has been set, after the occurrence of infection, at which offspring may not exhibit, to a greater or less degree, some evidences of the poison having been acquired with their life. All this refers, of course, to untreated syphilis, or that which has been very imperfectly treated.

The other side of the picture is, however, most encouraging. Seen from the beginning and treated properly and faithfully for a sufficient length of time, and under the most favorable conditions, syphilis is easily manageable, need give but little trouble, further infection can be prevented, and, in the opinion of many, the disease is entirely curable. The evidence of its curability, as is well known, has been inferred or deduced from the fact that it can be acquired the second time, whereas the individual who is still syphilitic is not capable of reinfection.

Such, then, being the disease which we have to do with, it remains for us to discuss the subject before us, namely: "the indications for, and the duration of the treatment of syphilis." I do not suppose that it is necessary for us to enter at all upon the symptoms of syphilis or its manifestations, which are familiar to all, except so far as it may be necessary to allude to them in reference to the treatment necessary at the various periods of the disease; and we should rather confine our attention to the form of treatment best at different stages, and the duration of the same, and to the total duration of treatment requisite.

1. The first question for us to consider is, How early should the treatment of syphilis begin; when in the existence of the disease should we commence active treatment calculated to overcome and nullify the poison?

If the disease were produced artificially, as we vaccinate and so communicate the infectious disease vaccinia, or if the entrance of the syphilitic poison were absolutely known, it would seem proper to administer the antidote at once. But, of course, the syphilitic infection is seldom suspected and never known positively until the chancre or primary sore forms at the seat of entry, from ten days to several weeks after the date of

its entry into the system, and the question arises, when should treatment begin?

If there were surely only one class or variety of sores or abrasions known, on the genitals or elsewhere, and that were always the first manifestation of syphilis, there would be little or no question about the matter. But the difficulty of diagnosing these sores is proverbially so great that, unless I am greatly mistaken, every one has at times found it hard to decide just when to give constitutional treatment. Shall we wait, as has been advised, until other manifestations of the disease occur, upon the skin or elsewhere, in order to be absolutely certain of the diagnosis, or shall we begin at once when we have reasonable cause to suspect that the sore is due to syphilis? I leave this and other questions for your deliberation.

2. The second question which must arise to the practitioner's mind is, How long should the treatment be continued? Under active internal medication, and perhaps with the aid of some local measures the sore heals, and all hardness may disappear in a greater or less length of time. Possibly if all circumstances have been favorable, and the treatment has been energetic, there are none of the so-called early secondary manifestations of the disease: no lesions appear on the skin, the throat keeps well, and the hair does not fall. How long should the treatment be continued, and when can we be justified in pronouncing the patient quite fit to cease medical treatment? We are here supposing that the patient fully recognizes his condition and the dangers of the disease, is perfectly faithful to treatment, and is quite willing to abide by the decision of the physician. How soon can his medical adviser permit him to leave off treatment, with the assurance or expectation that he will have no further manifestations of the disease, cannot communicate it to others, and will not transmit it hereditarily?

3. If the patient be unmarried, the question is often asked, how soon he or she can marry after acquiring syphilis? As the answer to this depends largely upon the character and duration of the treatment carried out, it is one which may also well be considered by us in our present discussion.

4. When patients come to us after syphilis has become thoroughly established, and after it has exhibited one or many of its manifestations on the skin or elsewhere, what shall be the duration of our treatment? Shall we give remedies only until the lesions have disappeared or ceased to give annoyance, or shall a regular course of treatment be instituted, and if so, for how long a time?

5. It often happens that some years after the primary infection, possibly after there has been more or less of treatment, late lesions, generally gummy in nature, appear in one or another part

of the body. What shall be our course in regard to them? Shall we simply give remedies until the obnoxious manifestation of the disease has disappeared, or shall we attempt to follow out a definite and continued course of treatment aiming at a more radical and permanent cure of the disease itself?

It would be possible, perhaps, to present many more questions for our consideration, but these, I think, cover much of the ground which often has to be mentally gone over by the physician facing a case of syphilis, and in regard to which he might not find practical aid in reference and text-books. These, therefore, are presented for discussion, in the earnest hope that the result of our deliberations may be both profitable to ourselves in settling our views in regard to the matters alluded to, and beneficial to our patients, in affording them, and consequently others related to them, more satisfactory and permanent relief from one of the worst diseases, when neglected or badly treated, to which the human race is subject, namely, syphilis.

THE POSITIVE DIAGNOSIS OF SYPHILIS, WITH SOME INTERESTING MEDICO-LEGAL TESTIMONY,

by EPHRAIM CUTTER, M.D., LL.D., of New York, was read by his son, Dr. J. A. Cutter.

For twenty years, a method of diagnosis of syphilis has proved so satisfactory that it is deemed positive and also a positive loss to those who do not use it. The mode of physical exploration is simple but delicate. A drop of blood just large enough to fill the space between an ordinary cover glass and an ordinary slide is obtained by puncture on the radial edge of the wrist, which is generally free from hair. Codman & Shurtleff, of Boston, make a scarificator (for the writers) which extracts the blood in a satisfactory way. The drop is transferred to the stage of the microscope, which must be good, to wit, for bacterioscopy. Fortunately good microscopes are more common than they were. If the light is properly adjusted and the observer is sincere and competent, as the syphilitic blood goes through its biological movements in dying, there will be seen here and there more or less numerous, active, automobile, sometimes saltatory, extremely minute globar bodies, called spores or microspores, micrococcus spores or bacteria, of the *Crypta Syphilitica*, which, when dancing or are put out of focus slightly, are copper-colored. The higher the power, the more distinct this color. With the $\frac{1}{8}$ inch objective of Tolles, the copper color has been found more marked than with any other power. Sometimes these spores will travel across the whole field. They are found in the serum spaces, over the red corpuscles and in the white corpuscles. In old cases, they are found in the urine and specially in the pus of chancres. These spores are the baby stage of the *Crypta Syphilitica*.

(Salisbury). The fully developed form or parent plant is a cylindrical filament, slightly tapering, and is found in the blood in the form of short curved segments, sometimes slightly clavate at one end and in long strings or filaments, in coils, skeins, or comparatively straight. In the walls of chancres they are very curling and spirally twisted like the vegetative filaments of the plant in carbuncle. These crypta syphilitica filaments are also copper-colored when put a little out of focus. The mature plant is not so common as the infantile, which has the power of reproduction in its immature stage and of producing the physical and chemical influences of the mature plant.

The spores are to be distinguished from minute globules of fat whose motion can be seen by putting milk or fat emulsion under the microscope. They sometimes join in pairs like other bacteria, but not often. Their movements sometimes last twenty-four hours after withdrawal, if the cover is protected by the thorough drying of the blood around its edge. Fat globules do not travel across the field save when borne by currents of capillarity, in which everything moves with them. Fat globules will not travel in opposite directions as syphilitic spores do. They are also to be distinguished from the spores of vinegar yeast, *i. e.*, the second stage of development of tubercle bacillus, in the blood, by their want of aggregation and by their mobility.

Vinegar yeast spores occur singly, in pairs, triplets, and so on to massive aggregations which form emboli and, when detained in the lungs, tubercle. In the present stage of knowledge the spores of syphilis are unique in their active, saltatory motions and copper color. These few words are enough to suggest the line of research. The subject is more fit for the pathological or morphological laboratory than a lecture room. Should the sun be available and a proper dark room be found, the writer will project syphilitic blood on a screen and demonstrate the spores thereon with the morphologies of other blood for comparison.

In a late trial for murder, the suspect's clothes were submitted to the writer, apparently stained with blood which had been more or less washed by water. In the study of the morphology of this clothing, a list was made of the objects found under the microscope along with the blood as a matter of detail—not intending to use the foreign bodies as testimony. But the counsel for the defense in his cross-examination told the Judge that he would show that I was not an expert and that I knew nothing about the subject. He then asked, "What did you find in your examination?" Thus challenged the list was partially read, embracing a variety of objects which are not known to many. In the list was included syphilitic spores in active motion and enlarged white blood corpuscles which enclosed syphilitic

spores. These attracted attention in and out of the court-room. Subsequently the physician of the murdered man testified that he was treating him for syphilis at the time of the murder. The jury hung, ten for conviction and two for acquittal. Just before the second trial a physician brought me a slide with blood which he said was taken from a patient whom he thought had syphilis. I found the spores in active motion. At the trial, this same physician was called to the stand, but was non-committal and got away as soon as he could. I was then shown the slide that he had brought to me, and on being questioned testified that I had found the evidence of syphilitic blood in it. It then transpired that a trap had been laid for me, for the blood in the slide was obtained from the prisoner. Still my evidence was positive, for a physician testified that he had treated him for syphilis. This time the suspect was convicted and sentenced for life.

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DR. CARL SEILER, of Philadelphia, inquired of Dr. Cutter the shape and size of the spores in question.

DR. CUTTER replied that he could not tell their size; he had not measured them. With 500 diameters the size was very small and varied from one to two, the same as blood corpuscles. Their movement was of greatest importance. Their shape was spherical.

DR. SEILER said he did not wish to intrude himself upon the Section as he was not a member of it, but the subject of Dr. Cutter's paper was one with which he had had a little experience. Ten years ago, at a meeting of the American Laryngological Association, Dr. Cutter had been asked by him the same question which he had just put to his son, and he had got identically the same answer. During that time the measurement and study of spores had vastly improved under

instruments of precision, and it seemed very strange Dr. Cutter had not taken the trouble to measure the bodies spoken of. Besides, it was a well-known property of broken up corpuscles in the blood to take on the movement and brown appearance described in the paper. He had no doubt the so-called spores of syphilis were nothing more than broken up blood corpuscles which danced up and down in the serum and gave a copper color. A strange fact in the presentation of the case was that the higher the power the smaller the cocci appeared. Generally the reverse was true.

DR. FLEISCHNER, of New Haven, feared that even if the observations made by Dr. Cutter were correct, they would prove of little practical diagnostic value to the general practitioner. Yet the thanks of the Section were due the doctor for his researches.

DR. W. B. MATHEWSON, of New Jersey, remarked that if it could be definitely shown that this spore did indicate syphilis the fact would be of great value as placing the diagnosis on positive ground. But thus far, the connection between syphilis and the spore had not been traced. The discovery of the spore of syphilis had been repeatedly asserted. If he remembered correctly, Cornil had found this spore in only about one-third of the cases of actual syphilis. He had seen the spore himself frequently in blood examined, both in syphilitic and healthy persons. The trial to which the author had alluded showed, he thought, a recklessness in testimony of which the medical profession should never be guilty.

DR. ROOT, of Hartford, thought the paper well worth consideration. He remembered that once the blood of some patients in a hospital in New York City had been sent to Dr. Cutter for examination, also some from the house physicians, and while the house physicians did not admit the truth to Dr. Cutter, yet to outside parties it was admitted that his diagnosis was correct in every instance.

DR. E. N. BRUSH, of Philadelphia, said that about 1878 he heard Dr. Ephraim Cutter make similar statements when in Buffalo, and he attempted to confirm them by observations of his own. Perhaps his objectives were not of sufficient power; at any rate, he was unable to make out anything of diagnostic value. He found the so-called spores of syphilis in persons who surely did not have syphilis, and he failed to find them in persons known to be syphilitic. He did not wish, however, to throw any discredit on Dr. Cutter's work. Certainly if there were a bacillus or spore of syphilis it would be very desirable to find it, but it should be remembered that it had been looked for many years, that spores of various shapes and colors had presumably been discovered, yet his own work, and the better work of some of his friends in the profession, had failed to confirm the discovery.

DR. CUTTER said, in closing the discussion,

that his father had simply desired to bring before the profession an easy and certain way of diagnosing syphilis. If the sun were not obscured later he would demonstrate the spores with the solar microscope.

DR. CARL SEILER, in discussing some of the points raised in Dr. Bulkley's paper, said that his experience with syphilis had been mostly limited to the treatment of its manifestations in the throat, consequently he knew very little about the chancre. He wished the opinion of the members whether it was good treatment to remove by surgery gummata when found in the mouth and nose. He had himself found that when the gummata were situated on the nasal septum, predisposing to stenosis, better results were obtained after scraping them with the curette and then going on with the usual treatment. In that way he obviated many of the difficulties consequent upon nasal stenosis, and obtained quicker results than without. Referring to a point raised by the chairman, he said that in his opinion, when local lesions of this kind existed they demanded both local measures and internal remedies. Quick measures should be used, such as the hypodermic injection of solution of bichloride of mercury. This he constantly employed until the lesions disappeared, and then placed the patient on mixed treatment for a considerable length of time afterward. He thought it bad practice to stop treatment as soon as the lesions disappeared. When asked what he considered sufficient time, Dr. Seiler replied about two years.

DR. CORLETT had been in the habit of giving the patient a placebo until it could be decided whether his chancre were a hard or soft one, not wishing to modify the disease by any remedy until a positive diagnosis could be made. During the past year, however, after reading Jonathan Hutchinson's report, he had somewhat changed his way of handling his patients, putting them upon mercurial treatment as soon as he thought syphilis was present. It was his opinion that the better rule was to wait until induration took place in the chancre and the lymphatic glands became involved before resorting to mercurial treatment. He would then place the patient on mercurial treatment and continue it for at least a year after all symptoms had disappeared. As to removal of the chancre, he thought it good practice when situated where its removal would not involve important parts. In the few cases in which he had seen it removed the disease ran a mild course afterward, which may have been due to the removal of the chancre. If a case presented itself before induration of the lymphatic glands he would most assuredly remove the chancre, if possible by the knife, if not, then by a strong cautery. On the glans penis the cautery would be preferable.

As to the medicine to be used during the second

stage, he believed the only drug which had the power of eliminating the syphilitic poison was mercury. It not only had the power of removing existing lesions, but of shortening the disease. Potassium salts would cause the lesions to disappear, but not were more prone to return. He quite agreed with Dr. Seiler, that it was necessary to continue the treatment two or three years, and at least one year after the symptoms had disappeared.

DR. GARLOCK remarked that iodide of potassium should be avoided in soft chancre; its effects were decidedly bad. He had found inunctions with mercurial salts very important in the treatment of syphilis, especially before the second stage, the symptoms of which it sometimes prevented from appearing.

DR. FLEISCHNER said the fact of the chancre being soft did not necessarily preclude syphilis. It was not uncommon to find a simple abrasion result in an ulcer and finally systemic syphilis become manifest, without there having been at any time local induration. The question of time of commencing syphilitic treatment might often be decided by the time which had elapsed between illicit intercourse and the appearance of the sore. A man who came to the doctor for treatment and acknowledged illicit intercourse would not be likely to mislead him with regard to date. If the sore appeared late, say twenty-one days after intercourse, he would not consider it necessary to wait for induration before commencing syphilitic treatment. Whether mercury were used by inunction or by injection, he thought made little difference. The latter mode probably gave quicker results, but that it was more effectual he could not see. As bearing on the duration of treatment it might be observed that some cases of syphilis terminated without treatment; they aborted. If, then, he subjected a patient to treatment and he responded very readily, why not, after a month's absence of symptoms, wait and keep watch? Was it necessary that an extra mild case be subjected to two years' treatment? He thought the treatment should be adapted to the individual case.

THE CHAIRMAN agreed in the statement that absolutely no hard and fast rules could be made for every case of syphilis. He also agreed in the remark that if a sore appeared at a given date, say a month, after a single illicit intercourse, syphilitic treatment might safely be begun, whether the sore was soft or hard; but in his experience patients usually had had intercourse at different times within a month or more, and they were likely to attribute a chancre to an intercourse of the previous week, whereas it dated from one of several weeks before. He called attention to a remark of Mr. Hutchinson which he had found of infinite value in diagnosis, namely: that the first chancre in the young man was almost always

syphilitic. He had called the attention of students to that fact many times. A man entering his clinic and stating that it was his first chancre, he could usually assure them, although it had all the appearances of a soft chancre, that within a month or two the patient would show distinct evidence of syphilis. Dr. Bulkley did not believe, however, in a chancroidal poison which could be isolated as the syphilitic poison could be. He believed the patient lost in strength when treatment was postponed, and he therefore began it as soon as he felt pretty sure of his diagnosis. As to how long to continue it, he could not agree with Dr. Fleischner. It would be safer, he thought, to keep all patients under treatment two years, and there were many who should be treated much longer. He would, however, allow them to marry after six or eight months' freedom from lesions. He has never known one who acted on that advice cause infection or transmit the disease to the offspring. He believed that during late lesions of syphilis there was no contagious element in the blood.

COW'S MILK FOR INFANT FOOD.

Read in the Section of Diseases of Children at the Fortieth Annual Meeting of the American Medical Association, June 1889.

BY E. F. BRUSH, M.D.,

OF MOUNT VERNON, N. Y.

In India, several years ago, one of the Hindoo kings, "in order to atone for his cruelties, caused a colossal golden cow to be made, through the body of which he passed with profound reverence and made it the era from which all his edicts were dated."¹ This historical fact is significant. We have practiced all manner of cruelties with the luckless infant deprived of its mother's breast; we have presented all manner of unfit substances to this small animal, whose only language is a cry, whose only desire is food. In fact, whenever a commercial enterprise finds itself burdened with some waste product that cannot be put to other use, it has been deemed a good substitute for mother's milk, and straightway the market is stocked with another "baby's food," and plenty of physicians to recommend it and plenty of babies ready for martyrdom. Now how can the physicians of the nineteenth century better atone for all their cruelties toward the human young than by causing a better cow to be reared, and from henceforth base all their edicts on the artificial feeding of infants on this better cow with a better milk product? I think that, with few exceptions, we are all agreed now that nothing excels good pure milk from good healthy cows for the artificial nourishment of infants, and if the great body of physicians put themselves about it with anything like the same energy they have

¹ "India and the Hindoos," F. DeW. Ward, 1850, p. 34.

displayed in suggesting substitutes, they can so reform the breeding of dairy cattle and the handling of their milk that the suffering of the human young will be ameliorated to a far greater degree than was ever hoped for by the astute chemist who started out, years ago, to make not only a substitute for cow's milk, but also for that of the human mother.² It is this idea of a substitute that has led us away from the more important consideration of improving what nature has already presented to us. Just look at the improvement in the commercial line that the middlemen have made in their milk transactions. These men have reduced the purchasing of milk to a nicety hardly surpassed by the purchasers of gold and diamonds; they have worked down the price of milk from the producer to the lowest possible point; they have dropped fluid measurement and adopted weight as being more accurate; in butter factories they have invented an oil test that will indicate, in a very short space of time, the exact amount of butter a given quantity of milk will yield, and on this test the price of the milk is regulated; likewise the cheese factories have established a standard of solids in milk which also regulates the price. But all the improvements these men have made do not help us, notwithstanding the fact that our chemists, sanitarians and health authorities have followed in the wake of these men and endeavored to make us believe that the healthfulness of milk is dependent upon the total solids, fats, etc., that relate solely to its commercial value. A larger percentage of fat that is easily removed from milk does not improve it for our purpose; it matters very little to us whether a given quantity of milk contains 12 or 14 per cent. of solids.

In milk for infant feeding we should consider, first, the variety of fats, the manner in which they are emulsified and combined; second, the amount of albuminoids and their condition; third, the amount and variety of salts; fourth, the health of the animals from which it is derived and the food that has been consumed to produce the milk, and, fifth, the changes which the milk has gone through before it reaches the infant's stomach. When we come to understand all these conditions we shall readily perceive just what kind of milk we want, and exactly the kind of cow which, with a given variety of food, will produce the very best substitute for the infant in lieu of its own maternal breast.

Let us then first consider the fats. Taking the human milk, which should always be our standard, we find that these solids, according to the best authoritative analysis, occur in propor-

tions of 2.11 to 6.89.³ Now this makes an average of 4.131 for human milk. From several hundred analyses of cow's milk in different parts of France, England and America the average of the chemist is 3.91. Thus you will see the difference, according to the chemist, between the two varieties of milk is very slight. I know, however, from the actual experience of practical dairymen, that cow's milk contains more fat than is indicated by the above figures. The lowest amount of butter obtained from mixed milks is 1 pound of butter from 25 pounds of milk. This would make the fat percentage 4. In drawing this deduction I am well aware that a pound of butter is not a pound of fat, but a pound of butter obtained from a given quantity of milk represents a pound of fat in that milk, because the quantity of fat in a pound of butter is exactly 84 per cent., and according to the latest experiments at agricultural stations only 84 per cent. of the fat can be obtained from the milk by the process of butter making. Now this percentage of 4 is a low practical estimate of the quantity of fat, for among dairymen, with special breeding and feeding, they get as high as 1 pound of butter from 14 pounds of milk, that is, 7.13 per cent. This is a higher percentage than has been found by any chemist in human milk. This is a practical fact, not chemical inference. It is very easy to understand where the fault in chemistry has been. The fat in milk is dependent upon the food the animal receives more than are the albuminoids, and we all know that very many of the varieties of fat contained in cows' feed are volatile, and the chemical methods of using heat dissipate these varieties of fat; hence the low percentage obtained by chemists. We must all admit that the fats contained in human milk, the product of an omnivorous, largely carnivorous animal, containing fixed and more stable fats, differ from those contained in the cow, an herbivorous animal, whose food holds more vegetable, volatile and unstable fats. Practically one is a yellow, unctuous, pleasantly odorous fat, as we see in butter; the other is colorless, waxy, decidedly different in odor, and, therefore, it can be easily understood that the chemist, who is obliged to use heat, will recover more fat from the human than the cow's milk. Thus we see that the fat is largely dependent on the nature of the food, and from the dairyman we learn that we can regulate the food of the cow so as materially to affect the proportion of fat secreted. We know very little about the chemistry of fats; so far as I have been able to ascertain, there has been but one analysis of cow butter fat made up to the year 1875. Wherever we turn, the analysis of Bromeis confronts us, and later English analysts, while finding this

² "Now I have come to the most important matter of the lecture, and that is the consideration of the proposition at one time sincerely made of substituting some other food for human milk as being a better food for infants." Abstract of a lecture before the New York Academy of Sciences by Prof. Albert R. Leeds, Ph. D., of the Stevens Institute of Technology. "Sanitarium," May 24, 1883, p. 325.

³ "Composition and Methods of Analysis of Human Milk," by Prof. Albert R. Leeds. Transactions of the College of Physicians of Philadelphia, third series, Vol. viii, p. 248.

analysis to be all wrong, are unable to give us a correct one. These later analysts,⁴ without ascertaining the proportions, have found in butter, palmitin, palmitic acid, stearin, stearic acid, olein, oleic acid, butyrin, butyric acid, caproic acid, caprylic acid, and capric acid. The fat of human milk has also been analyzed by Robin, several years ago, and also copiously quoted. I think that it is due to us from the chemists that we have some authoritative analysis of these milk fats, that we may know which, if any, of the fatty acids are the mischief-makers in milk, for I have no doubt that the glycerides and fatty acids from the decomposition of milk have more to do with the development of the poisons than the albuminoids have. The present popular method of analyzing milk by heat undoubtedly decomposes the fats, as is evidenced by the skin that forms on the surface of boiling or evaporating milk. This skin is undoubtedly the oxide of lipyl; it was at one time considered that it was coagulated albumen, but it does not form *in vacuo* and will continually form on the surface of boiling or evaporating milk as often as you remove it, and resembles very much the skin which forms on old paint pots that have contained vegetable oil. Furthermore, the condensation of milk for commercial purposes does not preserve the fats; hence, condensed milks are more or less skimmed, the better varieties having only the more volatile fats removed, otherwise they would become rancid. I am coming more and more to consider that the fats in milk are the bodies most likely to cause the digestive derangements of infancy, and when we know more of the composition and combinations of these bodies occurring in milk, many of the poisons, notably tyrotoxin, will be less of a mystery than they are now.

Our second consideration will be directed to the albuminoids. Some time ago there arose a mild dispute between two chemists as to the amount of the albuminoids occurring in human milk, Prof. Meiggs asserting that there was only 1 per cent., while Prof. Leeds makes the variation from 0.85 to 4.86, an average of 1.195. Koenig, an earlier analyst, makes the variation from 0.57 to 4.25. Some of these results give as high a percentage of albuminoids in woman's milk as we find in cow's milk, and I have no doubt in my own mind that the time and habit of extracting the milk has a deal to do with the amount of occurring albuminoids. In other words, when milk is extracted every two hours or less it can not contain as much of the cell material as milk from the same source extracted at intervals of twelve hours. This latter is riper, and it is the non-uniformity of the tissue which causes all the difference in the different occurring albuminoids. We know that during the incubation of eggs

casein is developed from egg albumen. This illustrates the ripening of albumen. Furthermore, take an egg just laid by the hen and boil it, and you will find immature albumen in it; that is, after boiling, instead of being thick and firm, like an older egg, much of it is milky. If boiled a few hours later all the albumen will coagulate perfectly, because it has had time to ripen. There is no doubt that the albuminoids in milk from healthy animals are all cell transformations, not an exudate, as are undoubtedly the fats and salts, because these latter we can influence by the food very plainly; but in health the albuminoids are constant without regard to the food, while during menstruation, pregnancy and other conditions, notably febrile disturbances, we find the fats and salts not materially affected, but the albuminoids are decreased, increased or totally changed, as we find in colostrum. The casein, besides being riper in cow's milk, by reason of its stronger growth, is intended by nature to coagulate into a hard mass, because it is the product of a cud-chewer for the nourishment of a cud-chewer, and the reason why it does not always coagulate in the infant's stomach, as it does in that of the calf, is that the latter animal's stomach secretes a principle called chymosin; this is the principle that curdles cow's milk, and it operates either in an acid or an alkaline medium. Pepsin will not coagulate milk, and hence the hard coagulum of cow's milk that sometimes forms in the infant's stomach is due to acidity of that organ, and this acidity is not always the fault of the stomach, but of the milk itself. The variations in the chemistry of the albuminoids found in cow's milk would not be surprising to any one if he could examine into the condition of some of its mammary sources, for often it will be found, on dissecting a cow's udder, which I always do when making an autopsy on a cow, that there are old cicatrices, one or more quarters of the udder intensely inflamed, sometimes a mammary duct clogged with a calculus or a clot of fibrin, and besides these pathological conditions the mammary gland is subject to benign and malignant infiltrations, bacillary tubercular deposits, and eruptive diseases of the skin involving the gland and ducts; therefore, that fibrin, serum and albumen in various forms are found in the cow's milk is not surprising, and it can safely be assumed that any variation in the albuminoids from the normal casein can be ascribed to sickness on the part of the animal producing the milk.

We next come to the salts contained in milk, and it is remarkable how few analyses have been made to determine the salts or minerals that are contained in this fluid. Heidlin's analysis, copied everywhere, seems to be the only exhaustive one of the salines in cow's milk made during the present century. It seems to me in this case too that

⁴ Hahner and Angell, "Butter, its Analysis and Adulterations," London, 1877.

it is time for the chemist to teach us something more. There probably never was a time, in our era at least, when milk was attracting so much attention as now, and still all our chemists are content with the total solids, fats, albuminoids and sugar—just what the butter and cheese makers want to know. From this much-quoted analysis of cow's milk salts we learn that milk contains, in varying proportions, the phosphates of lime, magnesia and iron, the chlorides of potassium, sodium and iron, and free soda. Robin gets from human milk, in addition to the foregoing, carbonate of lime and soda, phosphate of soda and the sulphate of soda, and potash. We have no means of knowing how constant is the occurrence of any of these salts in milk, or under what conditions they are modified; we do know, however, from the experiments of Fehling, that many of the drugs administered to the milking female are excreted in the milk. Therefore, we can safely assume that the saline constituents occurring in milk are influenced both by the health and food of the animal. That the phosphates are craved for by the milking cow is evidenced by her habit of chewing old bones and the like, and that there is a lack of this element of food is not to be wondered at, when we see herds of milking cows pastured on old, worn-out lands. The practical farmer knows that exhausted pasture lands need, more than anything else for their rejuvenescence, the phosphates, and we know that in our nutrition we need them also. The land on which a cow is pastured will indicate pretty fairly what we may expect to find in her milk as salts. We have all noticed the excessive growth of sorrel on exhausted land, and can it then be a subject of wonder that some kind of a vegetable acid should be found in the milk of animals that are obliged to include this variety of food in their summer rations, and sour ensilage or spoiled brewery grains in their winter feed? Theodore Hänkel's discovery of citric acid in cow's milk, to the amount of 0.9 and 1.1 grams per litre, is just what might be expected.

Sugar, I think, in milk has always been over-estimated as to its nutritive value, because we know that carnivorous animals do not secrete sugar to any appreciable extent, at least so the chemists tell us; and when we see a small slut nursing seven or eight puppies and keeping them all fat and in a thriving condition, we can easily imagine that sugar is not one of the necessary elements of food; while, on the other hand, we know that the gross result of condensed milk feeding, where the sugar is in excess, is not good. In regard to using the commercial sugar of milk as an addition to cow's milk for infant feeding, I think it is a mistake, as there are undoubtedly all the other crystallizable salts with the milk sugar, and, consequently, we can know very imperfectly what we are feeding an infant with

when we are giving it milk sugar. If the milk from which the sugar was crystalized contained improper vegetable salts, these would undoubtedly become crystalized with the sugar, and many of the proper salts would have become changed to the lactates. Therefore, I think, if sugar is to be used at all, although I deem it of doubtful necessity, the pure cane sugar is undoubtedly the best, because you know just what it is. When we consider the chemistry of milk as we find it in the books, what does it all amount to? The chemist has given us to understand that the needs for bodily nourishment are a certain amount of the albuminoids, carbo-hydrates, fats and salts. We can, therefore, from some of the cheap cereals, make this ideal food, and for one cent have as much in nutritive value as we get in milk at a cost twenty or thirty times greater. Then why do we give milk? Because we have tried the chemist's ideal food with the infants at least, and however admirable the theory may be, in practice it is a failure. Nature does not make so close an allowance that there is nothing to spare and no margin. She does not measure food by the rule of three, always exactly in the same proportions. Let us examine the work of the chemists themselves, and we find in human milk a standard that we cannot ignore, the albuminoids varying from 0.85 to 4.86. Therefore, let us not deceive ourselves with the popular error of the day, namely, that milk must contain just such a proportion of solids, and solids not fat, and so forth, to a chemical nicety; but let us look into the cow-house and see what goes through the cow to produce the food for infants, and what kind of an animal she herself is. Prof. L. B. Arnold, as good an authority as we have in this country on dairy matters, says, "Milk is the scavenger of the cow's body." What would be the sense of taking a sample of water from a sewer and asking a chemist to examine it for sewage; and so, when we go into a dairy stable and see dirt and filth, disease and improper food, need we ask the chemist to ascertain the total solids, fats, etc., to find if the milk is fit for infant food? When this fluid will not properly nourish an infant, it is not the cow's milk *per se* that is at fault, but it is either a pathological condition of the cow, or improper food or care, or the conditions through which the milk has passed on its way from the cow to the infant. It is safe to say that if we had devoted the same attention to the cow, and if the same amount of money that has been spent on the various substitutes had been devoted to the improving of her condition, the infant, at least, would be better off.

Now we can assert that cow's milk is the best food for the artificial feeding of infants, and when this fails the fault lies in one or the other of the following conditions, or several of them combined: First, a faulty condition of the cow her-

self, and this will be indicated by the condition of the albuminoids; second, improper food or an improper manner of feeding and caring for the animal, and this will be indicated by the fats and salts; third, improper handling of the milk after it is taken from the cow, and this will be indicated by the ptomaines and extractives. A proper understanding of these three sources of danger will make the feeding of infants a simpler matter than that offered by any of the substitutes, and be, at the same time, a more rational method. We shall consider the conditions of the animal that render her milk unfit for food. The cow is a unique beast, differing in many respects from any of our other domestic animals. One of her peculiarities, that has caused a deal of confusion among veterinary writers, is her normal temperature. Several years ago I searched diligently in books devoted to bovine pathology to find the normal bodily heat of the cow, and the confusion was puzzling. It is variously stated at from 98° to 101° F. I myself made several hundred thermometrical examinations under varying conditions, and found that the temperature is not constant in apparent health, as it is, within very narrow limits, in the human subject. Of course we cannot tell to a certainty how near to health a dumb creature is. The standard we have to adopt with these animals is that they are in health when they perform their functions with profit to their owners. Certainly there are many slight ailments that do not carry the animal beyond this limit. Therefore, the varying temperature in the cow may be due to slight ailments that do not demand the attention of the veterinarian. The average temperature of the cow in apparent health I have found to be $102\frac{1}{2}^{\circ}$ F., ranging from $101\frac{1}{2}^{\circ}$ to 103° . This, you will perceive, is a peculiarity of the cow, and none of the other large domesticated animals maintain so high a bodily temperature. Another peculiarity of the cow is the constant employment of her generative functions. She is always milking or pregnant, and both the uterus and the mammary glands are employed almost constantly at the same time; hence her nervous functions are exaggerated. Therefore, with an abnormally high temperature—for I have found that bulls and steers have not so high a temperature as the milking cow—and with an unnatural functional activity of the organs of generation, she is used also as a machine to transform food into milk, and it is astonishing to what capacity she has been trained in this direction. With four stomachs, the first alone with a capacity of 60 gallons, she simply eats, and she will eat anything. In health she is always either eating or chewing her cud, and her pedigree sometimes shows the closest consanguinity in her breeding. Now, when we consider all these unusual conditions, is it at all to be wondered at that the ordinary dairy cow is,

as a rule, an unhealthy animal, more prone to bacillary phthisis and scrofulous affections than other animals? Her nervous system is more subject to severe shocks, and, in fact, she is a delicate creature. Her attendants are not usually either mild or cleanly, nor is her housing always the best.

Our next consideration is the feeding and care of this nervous and delicate animal. The ordinary dairyman receives for his milk $1\frac{1}{2}$ to $2\frac{1}{2}$ cents per quart. At this low price received by the producer he cannot usually give his cattle just the best food. I noticed in a dairy journal this summer an estimate from the New York Dairy Commissioner. Taking the milk received at the creameries as a basis, the average income from each cow is about \$25 a year to the producer. This is almost 7 cents a day, from which the dairyman has to buy food and pay for labor. This sum alone would not begin to pay for proper food for the animal; hence the farmer is driven to every known expedient to keep his cows in milk, and the profit being so small, if there is any profit at all, he must utilize every drop of milk, whether the animal giving it be sick or well. In this state of affairs, is it not natural that all the cheap foods, such as brewery grains, distillery slops, the refuse from starch factories, enter so largely into the food from which our daily supply of milk is produced. Of course this condition of low price and improper feeding does not apply to every dairy, but after years of experience I have no hesitation in saying that it applies to the great majority of dairy farms surrounding New York City, at least. I have personally inspected small dairies where the sole article of diet was swill gathered in the city. Good food is to the cows, of course, the prime absolute essential for the production of good milk, and unless the public are willing to pay more for their milk than they do at present, a reform in this direction cannot be expected.

The handling of milk after it leaves the cow is the next important consideration. Owing to the cow's natural high temperature, 102° to 103° F., the milk, when drawn, must cool rapidly, and this first cooling taking place in the cow-house, the milk is, of course, more or less affected by the conditions generating odors. If these odors are not very bad they can be removed, more or less perfectly, from the milk by a process of aeration. This can be accomplished either by pouring the milk from one vessel to another in a thin stream in the presence of a pure atmosphere, or on a larger scale by pumping pure air into it by a suitable machine. One of the most dangerous methods that I know of for killing the odors that milk absorbs from dirty stables or improper food, is that recommended by many practical and otherwise sensible men, namely, the addition of nitrate of potash, that is, common saltpetre. It is very

easy, from this addition of nitre, combined with the glycerides and sulphates already contained in milk that is decomposing, to figure out chemically bodies approximating to nitroglycerine. It is suggestively strange that the toxic effects of nitroglycerine are similar to those of tyrotoxin. The often reported detonation of this latter extractive, while undergoing examination in the laboratory, is also suggestive of the properties of nitroglycerine. The addition of chloride of lime, which is also recommended for the same purpose, although apparently a less dangerous chemical compound, should, nevertheless, be prohibited. Soda is also added to milk sometimes to delay the souring process. The prohibition of this chemical may be viewed in the light of a stultification, when we consider the large amount of bicarbonate of soda that is used at the present day in one of the popular methods of feeding infants. I think it is no less reprehensible on the part of the physician than it is on the part of the dairyman. No chemical substance whatever should be added to cow's milk by the dairyman. Milk that is procurable too far away to reach the child within a few hours should not be used for infant feeding. The different degrees of temperature through which it must pass in its transit by country wagon, railroad train and city express are productive of changes that cannot but deteriorate the quality of the milk. It is well known that light, as well as heat, is one of the elements that hasten decomposition in milk; hence, the now popular method of serving milk in clear glass bottles is also a popular error.

No milk should be served by the milkman for infant feeding after it is twelve hours old, nor should it be served to the infant while it is warm, immediately after leaving the cow, for I have found by actual experiment that cow's milk, while still retaining the animal heat, if taken into the stomach, would coagulate into a solid mass; but this coagulum is not so hard and rubbery as the curd we see sometimes formed when milk is too old. In regard to sterilized milk, I am of the opinion that it is far better for us to make an effort to improve the quality of milk to such an extent that it will be needless to sterilize it, because, of course, sterilized milk must take its place with condensed milk and other varieties of preserved food. If we cannot improve our milk, then, of course, sterilization ought always to be practiced. Notwithstanding that it is a preserved food, like condensed milk, it is not necessarily skimmed or sweetened, as the latter is.

Having thus outlined the condition of the milk we get and the reasons why it is not always good, let me in the next place suggest remedies for the existing evils. First, in regard to the cow herself. No cow that is bred for a butter-maker should ever be used to furnish milk for infant feeding. The ideal butter-cow is too closely in-

bred and, consequently, too nervous; there is too much free fat in her milk. The ideal cow to furnish milk for our purpose should not be too finely bred and with little, if any, consanguinity in her breeding. She should not have had her first calf till she was in her third year; her milk should not be used after she is six years old, unless she has been spayed; she should be of a quiet disposition, her surroundings clean and quiet; she should be stall-fed always while giving milk for infants; her food should be hay without weeds, ground oats bran, flaxseed meal, roots (beets and carrots) bone-meal and salt—in the winter, corn-meal in addition, and in summer, in lieu of dry hay, green cut clover or grasses free from weeds. She should be curried daily and well bedded, and in winter the water she drinks should be slightly warmed. The milk should be aerated and cooled as quickly as possible. It should then be put into opaque bottles and securely closed.

Now, why do we not have this kind of cow and obtain this quality of milk from our milkman? The very first and prime reason is that milk is sold altogether too cheap. The producer, as I have before mentioned, gets about 2 cents a quart; the railroad or the carrier gets 1 cent a quart for all handled, and the distributor gets 5 cents a quart for peddling to the customers; therefore, the consumer pays 8 cents. This variety of milk does not usually agree with the child, and, therefore, the consumer is advised to buy some of the baby foods as an addition to the milk, and this increases the price of the food to something like 15 to 20 cents a quart. Now, if the producer got this extra amount of money he could buy better food and better cows, exclude the milk of sick animals, and altogether improve the quality of his produce. But would he do it? That is the question. Still, it would be more humane to make him do it when he is making a living, than under circumstances as they exist now. So the question of a purer supply rests very largely with the medical adviser. Instead of recommending commercial baby foods in addition to doubtful milk he should advise the parents to purchase milk at 12 or 15 cents a quart, and when the infant gets sick from digestive troubles then lay the blame where it is justly due, to the milkman, and he will lose his customer. The supply of baby milk in cities should be kept entirely distinct, and should be procured from those farms that are situated near enough to the consumer to get the morning's milk of the day of delivery. The dairies supplying this variety of milk should be under strict sanitary surveillance, for no matter how good a condition a cow may be in, if she is in heat, has sustained an injury, or is sick in any manner whatever, her milk should not be used for infant feeding until she has completely recovered. The ideal dairy for supplying infant food should be composed entirely of spayed cows,

and thus one constant source of nervous functional disturbance would be eliminated. In my own herd I have several spayed cows whose milk I supply for infant feeding. These animals are much more quiet in disposition, they give a more constant and uniform supply of milk, and seem to enjoy a more even degree of health than the cow who is occasionally bulling and becoming pregnant when giving milk.

DR. JOHN A. JEFFRIES said that he was much interested in Dr. Brush's paper, as he held the study of cow's milk to be very important. So long as our present customs remain, many children must be artificially fed, and cow's milk properly prepared is the best available substitute for the breast milk. By means of some mixture, such as Meig's, the milk can be made to more closely resemble human milk. It still remains that the albuminoids differ, and the same is probably true of the fats. The nature of the fats requires more attention, since some recent physiological work shows that the nature of the fat fed to animals affects the fat deposited in the system. He could not agree with the reader that cane sugar was better than milk sugar. The latter was now carefully prepared, was the natural food and was less easily fermented in the stomach and intestines.

As to sterilization, he thought it was very important. When milk only a few hours old was used he never had it sterilized, but if the milk must stand for some time before use it should be sterilized shortly after milking, before altered, in the country. The large number of children now fed on sterilized milk with the most happy results proved the value of the method beyond question. The three points in the artificial foods were a healthy cow, properly preserved milk, so modified as to resemble human milk.

DR. EARLY, of Ridgeway, said that while in the Pennsylvania Legislature during the pending of the pleuro-pneumonia bill he made an investigation of the dairies in the neighborhood of Philadelphia. He found many diseased cows among them, and in a stable at Camden, where six out of thirteen cows died, he found the owner selling the milk.

DR. CHRISTOPHER, of Ohio, was very much pleased with Dr. Brush's paper. He had recently made an investigation of the dairies of Cincinnati. In one dairy of great excellence he noted that the cows were thin. In distillery dairies the cows were fat. Thin cows taken there quickly fatten. Moreover, the urine of the swill-fed cattle was passed with great frequency and in large quantity, while that of properly fed cows was small in quantity and passed infrequently. Distillery cows give milk rich in cream and accumulate fat. This was without doubt a pathological condition resulting from deficient oxidation. This milk

further undergoes decomposition with great readiness and is acid in reaction.

DR. GATES considered Dr. Brush's paper one of great value. In his experience lean cows are the best milkers.

DR. BRUSH considered Bordin's condensed milk as good as it is possible to make it, but no condensed milk can be made to contain all the constituents of fresh milk. It is preserved food and, as such, is open to the same objections as all preserved foods. Experience has shown that they do not properly nourish the tissues. What the difference is cannot yet be demonstrated, but there is something necessary for proper nutrition. Distillery-fed cows are not fat; the appearance of fat which they show is due to an œdematous condition. He has often made post-mortem examinations of such cows, and finds the tissues blubbery instead of composed of firm adipose tissue.

THE CLINIC.

A STUDY OF THE LOCATIONS OF 7881 PRIMARY CARCINOMATA AS ILLUSTRATING THE PROBABILITY OF A CANCEROUS MICROBE.

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[Reported for THE JOURNAL.]

Gentlemen:—It is not yet histologically proved that there is a cancer microbe. Prof. H. A. Johnson of this city, observed objects some years ago which he thought might be of this nature, and more recently Thomas, of Dorpat, and Scheurlein, of Berlin, have each discovered organisms which made a similar impression on their minds, but the final proof of their surmises is not yet forthcoming. To-day I wish to call your attention to some important clinical facts bearing on this subject which render a cancerous microbe a probability and, therefore, a proper object for search. True, these facts do not positively prove the conclusion, but they point so strongly toward it that they may be said almost to settle the question.

You are aware that many pathogenic bacilli and micrococci have their original existence outside of the human body; that their spores float in the atmosphere like inanimate dust, in a dormant condition, but when they light upon exposed tissues wet with animal secretions they spring to activity, show a swimming power, and traverse considerable distances, multiplying as they go and generating disease. If the cancer germ exists at all, its actions prove that it has these qualities.

You are also aware that all primary carcino-

mata begin in the deeper epithelial cells, close to the basement membrane. We sometimes speak of epithelial cancer, meaning a slightly modified form of the disease; but in a certain sense all primary carcinomata are epithelial; that is to say, they all originate in epithelium. A few eminent authors claim to have found true primary carcinoma in tissues deeper than the epithelial surfaces, but the cases are excessively rare, and I very much doubt the accuracy of the observations. Now, bearing these things in mind, allow me to lay before you certain clinical laws, and to follow them with statistics.

1. Other things being equal, primary carcinoma is most frequent on those surfaces which by their position would be most accessible to free swimming microbes or spores derived from without the body.

2. The liability to cancer is increased if the epithelial surface is so situated that the spores can remain upon it for at least some hours without being swept away, as on the lower lip; but the liability is greatly diminished if the parts are frequently swept off, as the globe of the eye by winking, or the œsophagus by swallowing food and drink.

3. The liability to cancer is great if the membrane has vast numbers of deep glandular follicles into which the spores can penetrate and lie free from disturbance and have direct access to the more delicate epithelial cells, as at the pyloric end of the stomach and the follicles of the mammary glands.

4. Those portions of the skin which are usually uncovered are oftener attacked than those covered with clothing and constantly brushed by its friction. The skin of the face, for instance, produces more cancer than all the covered portions of the integument combined.

5. As might be expected, there are a few seeming exceptions to these rules, but so few that they do not break their general force.

To make good these clinical laws I have, with considerable labor, made a collection of 7881 cases of primary carcinoma, gathering them from my own records and from extensive reports prepared on both continents, and I have tabulated them for your instruction. The first table shows the sources of my information and the number of cancers in each part of the body.

I omit all cancers of the lungs, liver and lymphatics, because these are almost all secondary. It is the primary cancer alone which is derived from without. The secondary ones are all mere infections from the primary.

First let us consider primary cancers of the alimentary canal, as given in the table.

The prolábium of the lower lip, though so small a surface, gives us the surprising number of about 481 carcinomata. In proportion to the surface exposed it develops more cancers than

any other part of the body. The reason is not obscure. The lower lip is in such a position that vast numbers of germs from the air, from food and from drink may light upon it and lie there hours together without being dislodged. Finally the cracks and abrasions on it are very frequent from exposure to sun, wind and accidents, and from the pressure of the pestiferous stems of clay pipes, and these cracks, etc., furnish spots of access where the spores can reach the deeper epithelial cells. It is natural, therefore, to expect the disease at such a spot.

LOCATIONS.	Total No. of Cases.	From records in Mercy Hospital and in private prac.	From other American rep.	From Hosp's of London.	From Hosp's of Paris, 3 yrs.	From Imper'l Hosp. in Vienna, 7 years.
<i>Alimentary Canal and Appendages</i>						
Lips (nearly all lower lip)	481	94	31	71	135	150
Tongue	196	17	25	53	62	39
Other parts of mouth	244	21	12	25	87	99
Salivary glands	30	5	2	5	15	8
œsophagus	59	1	41	6	5	6
Stomach	1,945	212	846	27	685	172
Intestines	127	1	14	5	52	55
Pancreas	22	1	17	5	5	5
Rectum and anus	280	24	74	36	115	31
<i>Genito-Urinary Tract.</i>						
Penis	62	5	7	13	4	33
Urethra	4	1	3	2	2	4
Prostate gland	8	1	3	4	2	2
Testes	62	16	6	4	14	21
Bladder	46	1	17	8	6	14
Ureters	1	1	1	1	1	1
Kidneys	43	1	29	5	4	4
Vulva	39	1	2	4	3	20
Vagina	25	1	9	4	3	16
Uterus	2,308	252	553	82	1018	403
Ovaries	54	1	44	7	3	3
<i>Eyes, Ears and Air-Passages.</i>						
Eye-lids and conjunctiva	41	3	1	10	28	2
Ear	6	2	1	2	1	2
Nasal passages	3	2	1	1	1	1
Larynx	16	1	6	2	1	7
<i>Epidermic Surfaces and Appendaged Glands.</i>						
Face	327	44	80	2	131	70
Hands	39	8	8	1	14	9
Surfaces of the body covered by clothing	191	37	35	57	17	45
Mammary Glands	1,232	170	260	154	316	332
Grand total	7,881					

Now passing inward we find the tongue, though presenting a larger surface, has less than half as many cancers as the lower lip; still it gives us 196 cases. Vast numbers of spores, after passing by the lips, may light on the tongue and lodge in the forest of papillæ or on ulcers made by ragged broken teeth. If they could remain there undisturbed they might find as safe a nidus as on the lip, but the constant friction of the organ in the mouth and the frequent baths of saliva may wipe and wash away most of the germs, so that attacks are less numerous upon it than upon the lower lip.

The salivary glands give us only 30 cases of cancer. The orifices of their ducts in the mouth are very small and few spores would find them. Then these ducts are swept out many times a day by swift currents of saliva, so that only rarely could a swimming microbe be expected to make its way successfully to the gland.

The other parts of the mouth present us with 244 cases, mostly beginning at the edges of the gums, where germs might lodge in the crevices between the gums and the teeth.

The whole mouth thus gives us 951 cases of cancer, a large number, but just what we would expect from an organ so situated as to be constantly receiving external microbes every minute of both day and night.

The œsophagus gives us only 59 cases. This is precisely what we should expect of an organ which is swept clean throughout its entire length by every mouthful of food or swallow of water. Of the few attacks that do occur the major portion are at the lower part, where the sphincter of the cardiac orifice often detains small portions of food for some time, and where the follicles of the mucous glands are deeper and far more numerous than in the upper portion, so that a lodgment of swimming germs is more likely to occur.

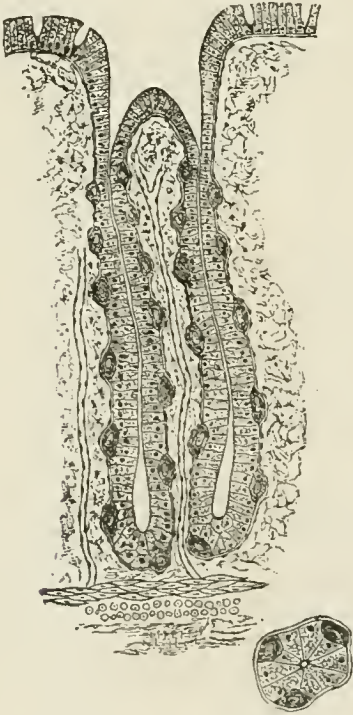


Figure 1.—Peptic gastric gland. (Gray.)

The stomach gives origin to 1945 cases, a startling array, equal to one-quarter of all the primary cancers of the entire body. I suppose this is mainly due to two causes. In the first place, whatever is swallowed remains there for hours; and, secondly, the mucous membrane of the stomach is honeycombed with many thousands of deep follicles, into which the germs have plenty of time to enter and obtain a permanent lodgment where they will be secure from being swept away. For a similar reason there is a difference in the

susceptibility of the two ends of the organ. Most of the stomach cancers originate near the pyloric extremity, and correspondingly the follicles are deeper, more numerous and more complicated at that end. The stomach, therefore, is remarkably well adapted to give lodgment to microbes, and perhaps few men would escape the disease but for the fact that its secretions in a state of health are powerfully germicide, destroying not only the yeast plant and most other ordinary ferments, but also many pathogenic bacilli, including probably the cancer spores. It seems probable that carcinoma can attack the stomach only at such times as the secretions are below par in germicide power, just as in such circumstances the food may undergo acid fermentation, making a sour stomach, or even putrefy from the action of putrefacient bacilli.

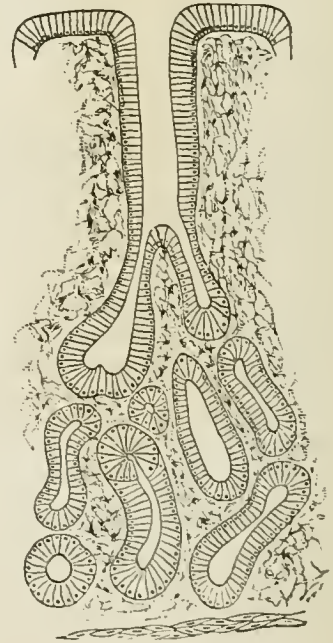


Figure 2.—Glands at pyloric extremity of stomach. (Gray.)

It follows that probably very few cancer spores reach the intestines in a living condition, and we should expect primary carcinomata to be few in these viscera. Accordingly our table gives us only 127 cases. This small number is the more striking because the walls of the intestines present nearly ten times the area that the stomach does, and they are specially subject to irritations and inflammations of many kinds. However, as we approach the rectum and anus, where germs can enter from without, primary carcinoma becomes more abundant. The anus and lower half of the rectum, though constituting only a very small

fraction of the intestinal surface, give us 280 cases, or more than twice as many as all the rest of the intestines put together. This is one of the many facts which constantly tend to make the clinical surgeon feel that the carcinomatous infection comes from without the body. Another fact pointing the same way is this: Cancer of the upper half of the alimentary canal occurs far downward along its course, because the germs are carried along with the food and drink; but at the lower outlet primary cancer rarely originates more than three inches above the anus, because the downward motion of feces prevents cancerous spores from ascending except in a few cases; hence the very striking fact that probably nine-tenths of all the primary carcinomata of this location are within three inches of the verge of the anus.



Figure 3.—Peptic glands of stomach after treatment with alkalis. (Frey.)

If we consider the male genito-urinary tract we find a similar condition. The penis furnishes us 62 cases, nearly all on the glans and prepuce, where germs can lodge and remain undisturbed, while the urethra, which is swept out by a swift current several times a day, only presents 4 cases. The prostate and the testes are, so to speak, terminal stations, and though many spores must fail to arrive there, yet those that do are safely lodged and can germinate undisturbed; hence we have more or less cancer of the testes, prostate, bladder and even kidneys reported. The figures for the testes are utterly worthless in most hospital reports because of an error in diagnosis by which a great part of the tubercles of the testes have formerly been reported as cancer; and as I have been unable to collect a sufficient number of cases which were proved by microscopic examination, I might have done well to omit that organ from

the list, but after reflection I decided to retain it. Perhaps, also, I ought to have rejected the kidneys, for in most hospital reports a large number of cases both of tubercle and of sarcoma of these organs have been erroneously tabulated as cancer by careless pathologists.

In the female genitals the cancers of the vulva and vagina are few. These organs are not terminal stations and not specially subject to irritation; but the cervix uteri, presenting abraded spots in millions of otherwise healthy women, is a natural prey to any such swimming germs as we have supposed to be the cause of cancer. Hence carcinoma of the uterus is exceedingly abundant, giving us 2,308 cases, which is almost one-third of all the primary carcinomata of the body. It is noticeable also that almost all cancers of the uterus begin not high up, but at the cervix. Fig. 4 is a portion of the uterine canal twice the natural size, showing how completely it is honeycombed with follicles adapted to furnish lodgment to swimming spores. Fig. 5 shows the follicles more highly magnified, and displays impressively their adaptation to retain pathogenic microbes in their recesses.

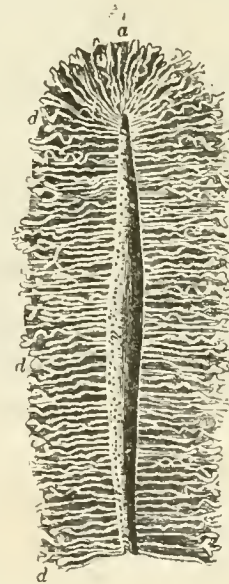


Figure 4.—Uterine follicles enlarged two diameters. d d d, follicles; a a a, orifices. (Am. Syst. Gynecol.)

The mammary gland presents remarkable statistics. The number of cancers of the organ in our table is 1,232, the greatest number of any organ except the stomach and the cervix uteri. At first glance this seems contrary to the rule, for external spores can only enter through the nipple, and that is a small organ, covered and brushed with the clothing and often supposed to be dry, except during lactation. However, lac-

tation covers a good deal of a woman's life during child-bearing age. Furthermore, the orifices of the milk ducts, even when not lactating, are frequently moistened with a very slight exudation of mucus, and at other times with perspiration. For these reasons there is abundant opportunity for swimming spores to light on the parts and enter the interior. In active lactation they would be mostly swept out again by the rush of milk, but in the non-lactating periods they would make their way undisturbed to the follicles and find themselves eminently in a terminal station, from which nothing could dislodge them. The almost total absence of carcinoma from the male breast falls in well with this theory, as the smallness of the nipples and the tightness and dryness of the orifices of the milk ducts are almost an absolute protection from the admission of germs of any kind.



Figure 5.—Intra-uterine glands. e, epithelium; g g, glands; c t, connective tissue; v v, blood vessels; m m, sub-mucous layer. (Am. Syst. Gynecol.)

There is a striking difference in the liability to primary cancer between those portions of the skin which are habitually uncovered, as the face and hands, and those which are covered with clothing and habitually brushed off by its friction. The face and hands alone give us 366 cases, while the whole of the covered portions of the skin together furnish only 191 cases, as if the clothing served in some way to prevent the lodgment and development of germs by its protective and by its brushing action.

This liability of different surfaces to cancer in proportion to their exposure to germs, and their ability to afford them an undisturbed lodgment, is still more strikingly shown if we compare equal areas of the different surfaces. I have calculated the areas of the different organs and the proportion

of cancer to the same area in all. Suppose the intestines to present one cancer on a given area of surface, then the number of cancers on the same area of other organs will be as follows:

Table showing the liability of equal areas of different surfaces to cancerous infection, the liability of intestine being assumed as 1:

Lower lip	8,448
Tongue	1,232
Rest of mouth and fauces	264
Esophagus	242
Stomach	572
Intestines	1
Rectum and anus	396
Skin of the face	264
Hands	22
Surfaces covered with clothing	4
Vulva	264
Vagina	61
Cervix uteri	5,776

This shows that, in proportion to its area, the liability of the prolabium of the lower lip to cancer is 8,448 times greater than a similar area of intestine, while that of the tongue is 1,232, of the stomach 572, and of the anus and rectum 396, the rest of the intestine being only 1. The liability of the face is 264, while that of the covered portions of the body is only 4.

It has been conjectured by very eminent scientific men that cancer is a mere product of ordinary irritation acting upon epithelial tissue or upon certain masses of embryonic tissue enveloped in the body and accidentally left over undeveloped from the foetal state, and that primary cancer attacks organs in proportion to the irritations to which they are subjected. There is a certain plausibility to this theory, but in fact it has never been proved that cancer has ever thus originated in a single instance; and, furthermore, the frequency of cancer is far from being proportioned to the amount of irritation in each organ.

There is one organ which is rebellious to every theory yet devised, my own included, and that is the Schneiderian membrane of the nose. It is extremely exposed to irritation and inflammation, and also to the reception of external germs of every kind, and yet it is rarely attacked with cancer. It is an organ standing by itself, so to speak, and possessing an exemption from attack which at present is unexplained.

Now, gentlemen, though the facts I have collected and laid before you point strongly to a probable cancer microbe, I wish you to understand that they only prove a probability, and not a certainty. Science is exacting. Before we can say that carcinoma is certainly caused by a germ, the following conditions must be fulfilled:

1. A microscopist must see the microbe.
2. He must obtain a pure culture of it.
3. He must reproduce the disease by inoculating the pure culture successfully into some animal. This has not yet been accomplished, but you and I may, nevertheless, observe the bearing

of clinical facts and note the probability where demonstration is not yet possible.

This probability brings with it important practical suggestions. If cancer is imported from without the body its invasion may often be prevented. In the breast, for instance, which furnished us with 1,232 cases, every germ must enter by the nipple, and it would not be difficult to prevent that. Bacteriologists find that a simple plug of cotton in their test tubes shuts out every foreign microbe. It would be easy to construct small concave cotton compresses, which could be worn as protectives on the breast. If desired, the cotton could be slightly dampened with glycerine to cause spores to adhere securely to the fibres, so that movements of the clothing could not cause them to sift through to the nipple. Additional security might be had by a thin rubber cap outside the cotton.

The stomach cannot be guarded from the entrance of microbes, but by attention to a healthy, moderate diet it may be kept in a condition to digest perfectly and to destroy most of the spores reaching it.

The cervix uteri can be cured of its dangerous abrasions, which probably furnish a nidus to the spores, and thus prevent it from becoming the seat of cancer. So in all parts of the body, such as the lips, the tongue, the gums, the anus, etc. If there are cancer spores in existence, cleanliness and careful preservation of the health and integrity of the surfaces will shut out the germs from the tissues which they are liable to attack.

You see, therefore, that I have a practical reason for wishing you to consider this subject, and that, acting wisely on the probability discovered, you may hope to prevent, in many cases, the onset of this disease.

No. 6 Sixteenth street, Chicago.

MEDICAL PROGRESS.

FIBRINOUS MEMBRANES WITHIN THE SPINAL CANAL.—DR. JOSEPH WIGGLESWORTH reports three cases of general paralysis in which he found, *post mortem*, fibrinous membranes in connection with the spinal cord. In the first case the membrane was from one to two lines in thickness and was found lying upon the external surface of the dura mater on its posterior aspect. It extended from the third to the seventh dorsal vertebra and was attached both to the dura mater and to the walls of the spinal canal.

In the second case the membrane was similar to the foregoing one. In the third case it extended from the lower cervical to the lower dorsal region and involved the roots of some of the spinal nerves. It was everywhere coherent and

could be detached as a separate membrane. The three membranes were all *external* to the dura mater, in which respect they differ from the similar formations which are frequently discovered in the cranium, especially in post mortems of the insane. Dr. Wigglesworth believes that the membranes described are the result of a hæmorrhagic effusion within the spinal canal; that an inflammatory process is not concerned in their formation, and that they would be discovered much more frequently if sought. In the third case he suspected the presence of the membranes before the death of the patient, on account of the symptoms of irritation of the spinal nerves which existed, to wit: retraction of the head and rigidity of the extremities.—*British Medical Journal*, September 21, 1889.

MORPHOLOGY AND PATHOLOGY OF NERVE TERMINATIONS IN MUSCLE.—Before the Paris Academy of Sciences, October 7th, Messrs. BABE and MARINESCO reported their studies and experiments in the direction above indicated. The following is a brief *résumé*:

A modification of histological technique has enabled them to enter into an extensive consideration of nerve terminations in muscle. In examining a terminal plaque of the lizard with a strong apochromatic homogeneous immersion lens they observed two substances in the last segment of the axis cylinder. One is darkly and strongly colored by gold and stretches out in a network; the other, paler, of a fundamental character, seems associated with the pale substance of the plaque. The sheath of Schwann, spreading out, covers the plaque and becomes continuous with the sarcolemma. In the plaque the dark substance forms many sinuous ramifications communicating in arcades and possessing lateral branches terminating in crosses. In this substance exist many small rounded nuclei. It appears that the dark substance is continuous throughout the plaque by the paler material which surrounds it. In the normal state fine lateral branches of the dark substance are rarely seen entering distant nuclei of the sarcolemma while certain fine prolongations of the periphery of the fundamental material enter the intimate structure of the muscle. In man the structure of the plaque is comparatively simpler.

By cutting the sciatic nerve of the lizard we have determined an excessive atrophy of the muscle nerves and of the plaques, a breaking up of the network of dark substance, and a disappearance of the nuclei. We have repeated these experiments upon the rabbit on a very wide scale. Thirty-six hours after section of the sciatic nerve the lesion is more pronounced in the terminations than in the small peripheral muscle nerves. It consists of a nearly total disappearance of the dark network. In place of the ramifications dark

iform cellules are seen. The fundamental substance and the fundamental nuclei are visible. These nuclei are swollen, increased in number, usually rounded, and have a fine annular zone about them.

Most of the lesions found in maladies of the nervous and muscular systems correspond in general with the lesions experimentally produced. Thus, in simple muscular atrophy an atrophy of the plaques is found, sometimes with proliferation of the nuclei. In hypertrophy of certain muscles as in Thomsen's disease there is uniform hyperplasia of the dark substance. In typhoid fever there is found a simplification of the terminal plaque, and often the peripheral portion of the terminal fibre is replaced by a very fine filament. In the pseudo-hypertrophy of adults we have noted a disappearance of the dark portion not only of the plaque, but often also of the terminal perannular segments. At the same time there often exists a proliferation of the fundamental nuclei. In a case of lateral amyotrophic sclerosis the terminal fibres and the plaques were extensively atrophied. In the multiple neuritis of Leyden we have in general determined the existence of the same conditions, but at the same time the signs of a new formation are seen, and sometimes even a proliferation of the nuclei of the plaque.—*Revue Médicale*, October 9, 1889.

METHYL CHLORIDE AS A LOCAL ANÆSTHETIC.

DR. ERNST FEIBES, in a recent number of the *Örtlicher klinische Wochenschrift*, draws attention to the extensive and successful use in the Paris hospitals of methyl chloride as a local anæsthetic. Methyl chloride (CH_3Cl) is a colorless, easily liquefied gas, with an odor resembling that of ether and chloroform. The readiness with which the gas liquefies adapts it for convenient use, as it can be stored in a siphon, or in a bottle of any shape specially constructed to conduct heat badly. It may be applied to any surface directly from the siphon, or as a spray, but this method is objectionable, owing to the anæsthetized area not being in most cases sufficiently circumscribed. Bailly describes the following method, which he calls "stypage." Tampons composed of cotton wool, surrounded by a layer of flock-silk and then covered with thin silk, are saturated with methyl chloride, and applied to the part by means of wooden or porcelain holders. After contact for some seconds the part gets pale and anæmic, and diminishes in sensitiveness. If the tampon be then removed there is marked reaction, shown by congestion and slight itching; but if the application be continued for a short time longer (a few seconds) the skin assumes a white, dried, parchment-like appearance. This is the time to operate. If you proceed further superficial necrosis may result. The application is sometimes succeeded by itching and an urticaria-like eruption. It is employed in

all kinds of small operations—circumcision, opening abscesses, and in neuralgia, lumbago, muscular pains, gout, etc. In scraping lupus it is best applied by means of a camel-hair brush, as special parts can then be anæsthetized with perfect precision.—*British Medical Journal*.

TREATMENT OF PERTUSSIS WITH RESORCIN.

—DR. JUSTUS ANDEER reports quite remarkable results in the treatment of whooping-cough with resorcin. In a child of 7 years, on the second day after resorcin was prescribed, there was great improvement in the symptoms, and sleep at night was much less disturbed. In ten days, the cough had disappeared. With five other children the effects were even more pronounced, all being cured within a week. An infant of 6 months with vomiting after each paroxysm of coughing, was relieved by the second dose, and in five days the cough ceased. In the latter case, Dr. Andeer used a $\frac{1}{2}$ per cent. solution in sweetened water given from the nursing bottle. In the former cases, he gave a 2 per cent. solution in water, of which half a wineglassful was administered four times daily, with directions that part should be used as a gargle, the remainder swallowed. He does not think that inhalations, or painting of the pharynx, with this solution, possess any advantages over this simple method.—*Centralblatt für medicinischen Wissenschaften*.—*Medical News*.

TREATMENT OF CHRONIC CATARRH OF THE BLADDER.—DR. L. FREY, in the *Centralblatt für Chirurg.* of August 17, claims that iodoform is especially suited for the treatment of chronic catarrh of the bladder, on account of its antiseptic, analgesic, and deodorizing properties.

The bladder should first be cleansed by a douche of warm water, and then a tablespoonful of the following, in a pint of warm water, injected into it:

R. Iodoform	50 parts.
Glycerine	40 "
Distilled water	10 "
Tragacanth	$\frac{1}{4}$ part.

mg.

These injections should be repeated every third day. Three or four will usually effect a complete cure.

Dr. Mosetig-Moorhof has treated twenty-three cases in this way, all of which were cured. No symptoms of intoxication from the drug were observed.—*Medical Age*.

QUININE IN PREGNANCY.—DR. E. A. G. DOYLE, Trinidad, W. I., finds that in the West Indies, where malarial fevers are common, abortion often results from the administration of quinine, writers entertaining an opposite opinion to the contrary notwithstanding. He has studied the question in all its bearings and is convinced that it is the quinine and not the fever that occasions the abortion.—*Brit. Med. Jour.*, September 31, 1889.

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SATURDAY, NOVEMBER 23, 1889.

PHTHISIS AND TUBERCULOSIS.

It seems that many of the enthusiasts of the microbic origin of disease, accepting the demonstrations of Koch on the origin of tuberculosis, would explain all the symptoms of pulmonary phthisis by the action of the same fungus. In tubercular disease in other parts of the body, such, for instance, as the large joints, the manifestations are quite different from tubercular disease of the lungs. There is no hectic, however great the emaciation, until the joint or large peri-articular tubercular abscesses are opened and infected with pyogenic bacteria. This ought to draw attention to the fact that phthisis is not a simple disease.

In the examination of sputa from tubercular patients, every one has noticed the abundance of micrococci and non-tubercular bacilli. These observations have lately been attested by culture experiments. The tubercular nodules are for a long time free from pyogenic infection, and the inoculation of gelatine in these early cases from isolated tubercular nodules, whether degenerated or not, is without result, as the bacillus of tuberculosis does not grow on gelatine. When, however, the disease has advanced farther, the infection of the avascular tubercular nodule follows as the result of a capillary bronchitis or accidental infection, and night sweats and other symptoms of sepsis begin. Then the cultures show numerous colonies of pyogenic bacteria in the region of

the tubercular nodules. Thus is established a condition resembling multiple abscess of the lung accompanied as a natural consequence with suppurative bronchitis. With the initiation of the pyogenic infection, the symptoms take on a graver character. Before there has been loss of strength from imperfect aeration of the blood and loaded action of the heart, now there is prostration from hyperexia, loss of appetite, night sweats and other results of sepsis. The dangers from pyogenic infection of the tubercular lung is scarcely less than that of the tubercular joint. This latter danger surgeons have long recognized. To be sure, the drainage of the lung is more complete and regular than that of any joint, so that there is less pronounced toxæmia.

The indications for treatment must be based upon a careful study of the conditions of parasitism. Until there is some form of medication which affects materially tubercular disease in joints or superficial lymph glands, there can scarcely be a satisfactory medication for tubercular disease of the lung. The administration of gases, hot or cold, seems like the application of a mad stone—irrational and irrelevant. When septic infection of the tubercular lung has taken place, the treatment cannot differ from that of septic infection elsewhere. The utter hopelessness of internal medication in such cases has been long recognized. There is nothing to be thought of which will benefit the patient except drainage, rest and food.

The proper indications for treatment point to the prevention first of tubercular infection, and when that is recognized, to the prevention of pyogenic infection of the tubercular lung. It seems *a priori* probable, as experience has shown it is possible, for tuberculosis of the lung, like tuberculosis of the joint, to remain in a dormant condition for half a lifetime, or even to disappear entirely under favorable conditions.

Here, then, is the climatic treatment of the tubercular lung disease. Put the patient in a dustless, and therefore aseptic atmosphere, and you have provided the most rational treatment. It is an antiseptic dressing to the open tubercular lung. The outdoor treatment of phthisis, or septic tuberculosis of the lung, long ago brought to popular notice by Felix Oswald, is also the rational treatment in this last and least hopeful stage of the disease.

CHILDREN AND THEIR TREATMENT,

Although the subject of the 'Treatment of the Diseases of Children is rapidly becoming one deemed worthy of careful consideration, yet there remains much room for more rapid improvement in regard to their discipline and the proper understanding of their needs, etc. Unfortunately, those who are entrusted with the training of the fathers and mothers of the future are rarely selected for their amiability, or capability of treating their little charges in a proper way.

This remark applies equally to parents and to teachers. Even among those who may be regarded as fitted by education and mental refinement for the care of children, it is constantly observed that there is an utter want of information upon many points in relation to the young, which frequently gives rise to very injudicious, even injurious treatment. Popular lectures can not deal with several of these points, and hence it becomes the duty of the physician to so instruct parents and teachers that they may do no wrong to the innocents in their care. Perhaps the one point upon which the most ignorance is displayed is the needed attention to the urinary apparatus. Incontinence of urine, a very common affliction of the young, almost invariably is regarded and treated as the result of laziness or even filthiness, and the unhappy sufferer is in many cases treated most barbarously to break him or her of the habit. It has happened that medical men who have no excuse save ignorance to err in this matter, have assured the parents that it was solely due to carelessness, etc., and have been the means of the infliction of discipline at which the soul shudders. Every physician who reads this should carefully think over the matter, and see whether he or she has erred in such a case. Were parents instructed that this is a misfortune not a fault, children who are thus troubled would at once be placed under medical treatment, and cured rather than be disgraced or heart-broken by shame and unmerited punishment.

This affection assumes another phase when the child so afflicted suffers the peculiar agony of strangury when denied the privilege of retiring when the call is imperative. Unfortunately, owing to the trickery of a few, all have to suffer. It should suffice if the parents inform the teacher of this condition of the child, and a request to

retire should at once be honored. In some cases on the contrary, in place of strangury, the child when refused, at once loses control of the sphincter, and the contents of the bladder are emptied into the clothing. Either is extremely annoying to the child and liable to result in permanent injury.

Another affection incident to childhood is "night terrors." In many instances, these two are associated. Equally with the bladder trouble, has this affection been neglected or misunderstood. The child is regarded as wilfully perverse, or as having fallen into a bad habit, and is punished in a variety of ways according to the ingenuity of its "care takers!" We had better say "persecutors." Now if every physician would impress upon the mothers in his practice what is meant by "night terrors," no doubt many such cases would be recognized and placed under the proper treatment. There is reason to believe that in some cases, this affliction is liable to end in some form of dementia. For this reason also it is imperative that it should be attended to as early as possible and thus prevent so disastrous a termination.

In conclusion, while the profession are seeking all kinds of specialties at which to devote themselves, let all seek to inform themselves upon these very important subjects, with the assurance that thus they will truly be doing the work of "physicians."

THE AMERICAN ACADEMY OF MEDICINE.

The recent meeting of the American Academy of Medicine, held in Chicago on the 13th and 14th of November, was the first one ever held in the West. Established at Philadelphia during the session of the Centennial International Medical Congress in 1876, this Association has since that date been earnestly at work to promote some of the most important interests of the medical profession. Its immediate objects, as stated in its Constitution, are to encourage young men to pursue regular courses of study in classical and scientific institutions before entering upon the study of medicine; to extend the bounds of medical science; to elevate the profession; to relieve human suffering, and to prevent disease. As was well said by a former president of the Academy, DR. FRANK H. HAMILTON, the Society seeks "to

remedy a great and universally admitted evil, namely, imperfect preparation for the study of medicine and its almost inevitable sequence, imperfect qualification on the part of those who are admitted to practice." In pointing out the available means for accomplishing this purpose, Dr. Hamilton said that the Society should labor to create a healthy public sentiment which shall, in a measure, influence medical colleges and medical men; and that, most of all, it should strive to create a sound sentiment among the young men who contemplate the study of medicine, and who should have clearly pointed out to them the most valuable means of enlarging their future fields of usefulness as practitioners. The Academy is not intended as a substitute for any other association of medical men, but as supplemental to all organizations which have for their object the uplifting of the profession and the enlargement of its field of useful endeavor.

The present meeting was an occasion of much interest. The addresses were of a very high order of merit, and some of them, especially that of the President, DR. LEARTUS CONNOR, abounded in statistical facts that cannot fail to be of the greatest interest to medical men throughout the country.

EDITORIAL NOTES.

HOME.

THE JOHN CRERAR LIBRARY.—The will of the late John Crerar was admitted to probate in the City of Chicago on the 14th inst. After the bequest of over a million of dollars to various religious, literary and charitable institutions, and to many personal friends, he also provides for the creation and maintenance of a free public library to be located in the South Division of the city. The sum appropriated for this purpose is estimated at over two millions of dollars. The execution of this trust is committed to a Board consisting of men singularly fitted for the work—and the wishes of the donor, under such management, will surely be realized. It is to be hoped that with such ample means at its command, the board of management will not only develop a model library for the public, but that ample provision will also be made for the several professions as well. If this shall be done, in addition to the magnificent reference library which was the

noble benefaction of the late Walter Newberry, Chicago, may soon become a literary centre, the advantages of which literary men will be quick to appreciate.

PUBLIC HEALTH MATTERS IN DETROIT.—Dr. Samuel P. Duffield, Secretary of the Detroit Board of Health, informs us that the State Board recently included typhoid fever as a disease dangerous to the public health and stated that according to the law it should be reported to the Health Officer. As there were certain points as to whether houses should be placarded or not, etc., the Detroit Board of Health held a session pursuant to a call from the President, Wm. Brodie, M.D., and the Board directed the following circular to be issued:

OFFICE OF THE BOARD OF HEALTH,

DETROIT, OCTOBER 15, 1889.

Dear Doctor:—Under the law requiring contagious and infectious diseases to be reported to the Board of Health, it is desirable that this Board be advised as follows:

1. Is typhoid fever in your opinion CONTAGIOUS?
2. Is typhoid fever in your opinion infectious?
3. Is typhoid fever in your opinion both contagious and infectious?
4. If typhoid fever is either infectious or both contagious and infectious, do you advise that although the law requires such diseases to be reported to the Health Office, that it should also be placarded as in small-pox, scarlet fever and diphtheria?

By promptly answering, and confining your replies to the above questions, and if possible attending the adjourned meeting of this Board in the Mayor's office at 7:30 P.M., Saturday, October 19, you will confer a favor upon the Board of Health.

By order of the Board.

WM. BRODIE, M.D., President,

SAMUEL P. DUFFIELD, M.D., Secretary.

There were 89 answers to 450 circulars sent out, and answers were as follows: Contagious: No, 60; yes, 26; in doubt, 5. Infectious: No, 14; yes, 74. Both contagious and infectious: No, 54; yes, 19; in doubt, 5. Placard: No, 69; yes, 20.

On the basis of these figures the Board directed the Secretary to notify the profession that the cases must according to law be reported, but that it was not necessary to have the house placarded, etc.

The form recommended by the United States Baggage Masters' Protective Association was endorsed by the Board. This form compels the undertaker to faithfully do his duty and swear to the same having been performed.

MEDICAL SOCIETY OF THE STATE OF WASHINGTON.—In response to a call by the President

of the Territorial Medical Society, there was a largely attended meeting of the profession at Tacoma, October 21st and 22d. The Territorial Society, as such, adjourned *sine die*. The formation of a State Society was then proceeded with, and the following officers were elected: President, Edward L. Smith, Seattle; First Vice-President, J. S. Wintermute, Tacoma; Second Vice-President, M. Pietrzycki, Dayton; Treasurer, H. S. Willison, Port Townsend; Secretary, C. L. Flannigan, Olympia; Board of Censors: Drs. Shaver, Heg, Crump, Boswell and Essig; Board of Trustees: Drs. Van Zandt, Van Buren, Merrick, Libby and Marion. The regular standing committees were also appointed. There are about sixty-five charter members of the Society. The next meeting will be held at Spokane Falls on the second Wednesday in May, 1890.

DISTRICT MEDICAL SOCIETY OF CENTRAL ILLINOIS.—The fourteenth semi-annual meeting of this Society was held at Decatur on the 12th inst., with a large attendance, over 100 physicians being present. Dr. Rauch, of the State Board of Health addressed the society briefly in the evening, on "City and Country Sanitation and its Relation to Contagious Diseases."

FOREIGN.

BERLINERS EATING HORSE MEAT.—A dispatch from London says that the consumption of horse meat in lieu of beef is daily increasing in Berlin, and it has become almost impossible for the butchers to procure sufficient genuine beef to supply the demand of those who are able to pay the almost fabulous price which that commodity commands.

FRENCH PHYSICIANS, it seems, feel the pulse of the people of France in more ways than one. Of the 557 members returned at the recent general elections to serve in the French Chamber of Deputies, 48 are doctors of medicine, 4 are druggists, 1 is a dentist and 1 a veterinarian.

THE late Father Damien, who died in the leper settlement at Molokai, Sandwich Islands, will be succeeded by his brother.

THE SCIENTIFIC GRANTS OF THE BRITISH MEDICAL ASSOCIATION.—The following additional grants have been made by the Council in accordance with the recommendation of the Scientific Grants Committee: Mr. Hankin £50 to con-

tinue his investigations into the nature of an albuminose that has been obtained from anthrax cultures under certain conditions; Dr. R. Kirk £10 for a research on alcaptonuria and on the distinction between albumen and mucin in the urine, and some other points in connection with proteids in that fluid; Dr. J. R. Bradford £15 for some experiments on the action of the cortex cerebri on the vaso-motor system; Dr. H. A. Ashdown £10 for a continued research upon absorption from the bladder.

THE MEDICAL PROFESSION AND TEMPERANCE.—The *British Medical Journal* says: An unusually large number of important temperance conferences have been held recently, including a National Temperance Congress at Birmingham. It is significant of the lively interest taken by members of the profession of medicine in the temperance movement that at Birmingham two metropolitan physicians and at Norwich a metropolitan physician and a distinguished provincial surgeon took a prominent part, while at Glasgow a leading place in the proceedings was assigned to the assistant of one of the university medical professors. A public meeting at Birmingham was addressed by several provincial members of our Association. The British Medical Temperance Association numbers over 400 members, all abstainers.

IS MAN LEFT-LEGGED?—Dr. W. K. Sibley read a paper before the British Association in which he argued that man was naturally left-legged. Standing working with the right hand, there was a tendency to balance on the left leg. Race paths were nearly always made for running in circles to the right, and the majority of movements (such as dancing, running, etc.) were more readily performed to the right. In walking, it was more natural to bear to the right; crowds as well as individuals did so. Troops started off with the left foot; the left foot was placed in the stirrup or step of the bicycle in mounting; the left foot was the one from which a man took off in jumping. From measurements made by Dr. Garson of the skeletons of the two legs, in 54.3 per cent. the left leg was the longer, and in 35.8 the right. From measurements of 200 pairs of feet, it was found that in 44 per cent. the left, and in 21.5 the right, was longer, while in 34.5 they were equal.—*Medical Record*.

TOPICS OF THE WEEK.

THE ITALIAN PREMIER ON STATE MEDICINE.

In his great speech at Palermo on the 14th of October, Signor Crispi gave special prominence to what his administration had effected for the sanitary rehabilitation of Italy. "For four years," he said, "there had weighed on Italians the incubus of an epidemic"—cholera, to wit—"which, besides physical suffering and material loss had induced a moral disturbance, inevitable, perhaps, in a country where hygienic education was still so primitive and so sporadic. It was a prime necessity, therefore, to proceed at once to the sanitary rehabilitation of the State, and we made provision accordingly. We addressed ourselves first to the minds of men, and we prevailed on them to look the enemy in the face as the principal means of overcoming it. With anxious and systematic care we took the sting from present evils, and then we reconstructed laws to obviate their recurrence. Sanitary provisions should impose on the freedom of the individual no restrictions but such as are required for the safeguard of the lives of others. Personal hygiene is on that account one of those salutary measures which we are entitled to exact." In cognate spirit the municipal services were unified and at the same time reformed throughout the Peninsula; "while," continued Signor Crispi, "we modified the constitution of the Sanitary Councils, so as to insure an earnest and an unremitting surveillance over the public health. We restored to its proper centre—the Home Office—the direction of the seaboard lazarettos, and by furnishing the chief ports of the kingdom with the means of precaution and defence, we established an outpost system to make head against the importation of disease. By decree and by law of favor (*legge di favore*), we assisted the minor communes in carrying out their sanitary rehabilitation—an opportunity of which already more than three hundred have taken advantage. By a modification and extension of the Bill, enacted for the benefit of Naples, the application of which to themselves was craved by some sixty communes, by considerably evoking and approving plans of house-reconstruction (*piani regolatori*) we have brought to the great cities the blessings of effective sanitation." Nor have more strictly medical reforms been neglected. "We have reconstituted," said Signor Crispi, "the whole vaccination service; we have revised the Pharmacopœia; and on the frontier towns, as a safeguard against epizootic invasion, we have brought up the veterinary stations to military efficiency. We have wrought, in a word, the practical consummation of that sanitary code whose fundamental idea will prove not the least title to the love and veneration long earned from all Italians—whether surviving comrades, or of future generations—by that soldier of science, of fatherland, and of freedom, Agostino Bertani. Thus we may pronounce ourselves as on the true path of that sanitary redemption for which, not less than the political, Italy was yearning—a redemption of equal necessity, and certainly not less of a blessing. An Italy sound in a physical sense will yield us those vigorous arms which will ferti-

lize her the best—those hardy constitutions which as living ramparts will prove her strongest safeguard." The "youngest of the Great Powers" is to be congratulated on the enlightened legislation set forth in these eloquent periods. It will henceforth be her duty to develop, as well as maintain, the sanitary reforms she has effected, and to justify in this respect the position she has earned in the European State-system.—*Lancet*.

WORK KILLS NO MAN.

From the Harveian Oration delivered at the Royal College of Physicians, October 18, 1889, by J. E. POLLACK, M.D., F.R.C.P., we quote the following concluding sentences:

I need not say to such an audience as this that *work*—the due exercise of every function given to us—kills no man and shortens no life. The causes are to be found in what is called our extended civilization. We are no longer traders to one country, nor for one or two commodities; but the telegraph has introduced us into a widened sphere, and our merchants have investments in every climate, and enter on risks of a kind so varied that the knowledge of no one man is sufficient to grasp it. Hence there are the anxieties of extended speculation, and a necessary want of the perfect understanding of each. The knowledge of one kind of trade was formerly "power," and led to prosperity; now we are playing games with all the world. Those who are present know well what part of the organism it is which generally fails under such pressure. The public say it is *brain*, but we know that it is *heart*—the motor power which Harvey studied, although, perhaps, he did not foresee to what pressure a modern civilization and struggle would subject it.

I have spoken but of the trading class and the speculative class, but all classes of society should learn to counteract in themselves the depressing agents of excessive worry, and to beware of the race which, once entered on, may exceed the best of our powers and ruin the machine.

RESULTS OF VACCINATION.

The opponents of vaccination in England, says *Science*, have of late been more active than ever; and as a result of their activity, a Royal Commissioner has been appointed, whose duty it shall be to make a full investigation of the whole subject and submit a report thereon. Friends of vaccination should welcome such an inquiry, as the method stands upon such a firm foundation of facts as to be able to stand the most searching examination. If it has not accomplished all that is claimed for it, the failure is due to insufficient or inefficient performance of the operation, and the sooner such abuse of it is made public the better. It is a rather remarkable coincidence that just at this time events should transpire at Sheffield, Eng., which show the value of vaccination. Small-pox has recently been very prevalent in that city. In a population of about 320,000 there have been 6,088 cases of the disease, of which number 590 proved fatal. Dr. Barry, who has made a report to the local Government Board, finds that the attack rate of the vaccinated

children under 10 was five in 1,000; of the unvaccinated of the same age, 101 in 1,000. The death-rates for the same classes were respectively .09 and .44. In every 1,000,000 of those twice vaccinated there were eight deaths; once vaccinated, 100 deaths; and unvaccinated, 5,100 deaths.—*The Druggists' Gazette*.

THE DEATH OF ISAAC E. TAYLOR, M.D.

We have received from the New York State Medical Association the following transcript from its minutes :

The Council of the New York State Medical Association sadly records its unfeigned sorrow for the loss of a valued founder, fellow and late president, endeared by his personal qualities as he was admired for his scientific attainments.

An illustrious name is transferred from the active list to the roll of honor of those who have bravely borne themselves in the foremost rank and fallen triumphant.

Untiring in industry, wise in counsel, affectionate in friendship, steadfast in religious faith, beloved by his associates and revered by the profession which acknowledged him as one of its leaders, Isaac E. Taylor lived an example for emulation by his survivors and successors, and rests from his labor, leaving a reputation unassailed by enmity and beyond the reach of jealousy.

By the Council,

JOHN G. ORTON, M.D., President.

E. D. FERGUSON, M.D., Secretary.

"ANGLO-AMERICAN VIENNA MEDICAL ASSOCIATION."

A meeting of British and American physicians was held recently at Vienna to consider the question of establishing an association for the purpose of furnishing all needed information to English-speaking medical men coming to study in Vienna. A large proportion of those now in the city were present, and it was resolved to start such an association, under the title of the "Anglo-American Vienna Medical Association." A committee of management was appointed, whose chief duty will be to supply information to newcomers on their arrival as to matriculation, medical courses, lodgings, etc., and, when necessary, to call meetings of the Association. The committee, on the occurrence of vacancies in their number through members leaving Vienna, will fill these up as soon as possible. The office of the Association will be at No. 12 Landesgerichts Strasse. It was agreed that membership should be open to any British or American physician or medical student on payment of an entrance fee of one guilder. Letters of inquiry, addressed to the President or Secretary, will at once receive attention.—*The Lancet*.

IMMUNITY AGAINST ANTHRAX.

The question of immunity against infectious diseases is the question of the day. In many bacteriological laboratories experimenters are working at that subject with varying success. Since Pasteur's first publication on preventive inoculation against cholera of fowl, *rouget*, anthrax and rabies, numerous experimenters have confirmed his statements, and the practical value of such preventive inoculations has now been abundantly proved.

The whole subject, however, is still in its infancy, for the way in which immunity is produced—the mechanism of immunity, to borrow Professor Bouchard's happy expression—is by no means clear. M. Pasteur, two years ago, in a letter to M. Duclaux, suggested that immunity against rabies in patients who had undergone his preventive treatment might be due to a chemical vaccinating substance secreted by the microorganism of rabies. There are many facts in favor of this theory, though unfortunately its truth has never been conclusively demonstrated.

In 1887, Messrs. Salmon and Smith showed that if a culture of the bacillus of hog cholera, after being sterilized by heat (58° C.), was injected into an animal, the latter acquired an artificial immunity against the bacillus of hog cholera, so that when the living microorganisms were injected they produced no symptoms. The demonstration of chemical vaccinating substances was not altogether satisfactory until Charrin, in the same year, proved that the introduction of a heated and filtered culture of the bacillus pyocyaneus protected rabbits against the inoculation of the living bacillus pyocyaneus. Roux and Chamberland shortly afterwards proved this to be true for malignant oedema, whilst Chantemesse and Vidal were able, by using a similar method, to protect mice against the evil effects of the typhoid bacillus. The experiments of the lamented Dr. Wooldridge on anthrax are also of the greatest importance, as showing the protective power of chemical substances.

The latest contribution to our knowledge of immunity is the paper by Mr. E. H. HANKIN, in this week's number of the *Journal*. Mr. Hankin claims to have prepared from the cultures of anthrax an albumose which, when injected into mice or rabbits, protects these animals against the action of the anthrax bacillus. Mr. Hankin's experiments were made under the guidance of Professor Koch, at Berlin and, as far as they go, appear to warrant us in thinking that he has discovered an improved method of vaccinating against anthrax. We must wait for a full account of all his experiments, to enable us to form an opinion as to the practical value of his work, but its scientific interest will be at once evident.

Mr. Hankin concludes his paper by a series of conclusions which are rather suggested than proved by the facts he has published up to the present date. As his paper is only a preliminary account of his investigations, we must reserve further remarks until we are in possession of all the data on which his conclusions are based.—Editorial in *British Med. Journal*.

THE HOSPITAL BULLETIN.

The trustees of the Johns Hopkins Hospital have authorized the issue of a monthly publication to be known as the *Hospital Bulletin*. It will contain announcements of courses of lectures, programmes of clinical and pathological study, details of hospital and dispensary practice, abstracts of papers read and other proceedings of the Medical Society of the Hospital, reports of lectures and all other matters of general interest in connection with the work of the Hospital. Nine numbers will be issued annually. The subscription price will be \$1. Subscriptions may be sent to the publication agency of the Johns Hopkins University, Baltimore, Md.—*Maryland Medical Journal*.

PRACTICAL NOTES.

THE INFLUENCE OF THE NERVOUS SYSTEM ON RENAL FUNCTION.

The *Lancet* gives an abstract of Dr. Francesco Spallitta's experiments, made with the view of ascertaining whether the effects produced on the renal secretion by lesions of the medulla oblongata are due, as held by Ustimowitsch, Heidenhain and B. Sachs, to the alteration of the blood-pressure caused by the lesion, or, as supposed by Eckhard, to some morbid change in the innervation of the kidney. The plan adopted was to cut through the spinal cord at various levels, and to watch the effect upon the secretion of urine.

In order to be certain that the urine found in the bladder at the necropsy was secreted after the spinal cord had been cut, a solution of iodide of potassium was injected under the skin after the operation, and the urine tested for iodine. The results obtained were as follows:

1. Lesions of the cord at the base of the first dorsal vertebra produce no changes in the renal secretion.
2. Sections at the seventh cervical and first dorsal vertebra permit the continuance of the secretion.
3. Sections at the sixth, fifth or fourth cervical vertebra allow the secretion to continue, but cause the urine to contain a certain amount of albumen.
4. Sections at the third or fourth cervical vertebra arrest the secretion altogether.
5. Electrical stimuli applied to the cord in the cervical region arrest the secretion entirely.

The theory which seems to Dr. Spallitta to accord best with these facts is, that the effect on the renal secretion of lesions of the cord is mainly due to the destruction of special nervous fibrillæ existing in the cord which govern the function of secretion of urine.—*Canada Lancet*.

TREATMENT OF SPRAINS.

It may be observed that a sprain is frequently treated with a liniment advised by physicians. It is, indeed, painful to see a physician writing a prescription for a sprain. There are but two indications in the treatment of sprains: 1. To provoke rapid absorption of the fluid effused around and within the joint; and 2, to favor cicatrization of the torn parts by immobilizing the articulation. Now, the modes of treatment hitherto in vogue do not fulfil these two indications. Massage would seem to present some real advantages, but it can be of little service in the case of severe sprains, and mild injuries would probably do as well under rest alone. An elastic bandage, the depressed parts being covered with a layer of cotton so as to prevent too great pressure over the prominence, and thereby causing sloughs, will meet the first indication, and by its use in procur-

ing rest it will meet the second indication. This bandage acts like massage in promoting absorption, and also secures immobility of the joint. It is of equal service in sprains complicated with rupture of points of insertion, whereas massage would be productive of harm in cases in which splinters of bone were torn away. The practice of relieving the mind of the patient by giving him something to do in the way of applying bad-smelling linaments is a pernicious one, and really shows an unprofessional or unscientific attendant.

THE CONDITIONS OF INTRA-UTERINE INFECTION.

Infection of the foetus before birth is a recognized fact, but it is, perhaps, too readily assumed that infective material may pass from the maternal into the foetal blood by the normal channels of embryonic nutrition. Dr. Romeo Mangeri, of Catania, believes this to be impossible. As the result of wide study of the literature of the subject and of original experiments, he has come to the conclusion that no formed elements naturally pass out of the mother's blood into the foetal circulation. Cinnabar, Indian ink, carmine, and other materials were injected into the jugular veins of animals advanced in pregnancy, but in no case could any trace of the substance employed for experiment be found in the foetus. Passage of formed elements can only occur when the maternal placenta becomes diseased by inflammation, hæmorrhages, etc.; so that the walls of the villi are destroyed. Only under these conditions can septic or specific organisms pass from the mother into the blood of the foetus.

EATING BEFORE SLEEPING.

A recent writer says that the view that brain workers should go supperless to bed is not good advice. Most medical authorities of the day think it wrong. It is a fruitful source of insomnia and neurasthenia. The brain becomes exhausted by its evening work, and demands rest and refreshment of its wasted tissues, not by indigestible salads and "fried abominations," but by some nutritious, easily digested and assimilated articles. A bowl of stale bread and milk, of rice, or some other farinaceous food, with milk or hot soup, would be more to the purpose. Any of these would insure a sound night's sleep, from which the man would awaken refreshed.

HEADACHES FROM ALCOHOL AND TOBACCO.

DR. E. LLOYD HUGHES recommends the following formula in headache from abuse of alcohol and tobacco:

R. Spir. Ammon. aromat f ʒss.
Spir. Chloroformi mx.
Aquam ad f ʒj.
S.—At one dose.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting, March 27, 1889.

DR. S. C. BUSEY, PRESIDENT PRO TEM.

DR. ROBERT T. EDES presented a specimen and history of an

ENLARGED PROSTATE GLAND.

The patient was a man æt. 76, very corpulent, of excellent habits in early life, but of late years using a great deal of alcohol. In October, 1887, he consulted a surgeon in London for urinary trouble, and since that time has been constantly attended by a male nurse, who has used the catheter at intervals, usually of from two to three hours in the night, but sometimes considerably longer. He has had several attacks of hæmaturia, attended with fever, and in the intervals the urine has been profuse and purulent, but seldom ammoniacal. He failed gradually without any very marked new symptoms except increasing stupor but not coma, until shortly before death. After death the prostate was found greatly enlarged in all directions, and, in addition, the middle lobe stood up as a distinct tumor in front of the internal orifice of the urethra. In this neighborhood there was much congestion and ecchymosis, being probably the seat of the hæmorrhage. The urethra, through the prostate, was of full size, and an instrument could be readily passed. The ureters were somewhat dilated, and also the pelves of the kidneys. The secreting substance of the kidneys was but slightly encroached upon. The surface was somewhat granular, and they presented to the naked eye the appearance of fatty degeneration in patches.

DR. SMITH had presented a specimen some years ago resembling that reported by Dr. Edes to-night. It was an enlarged prostate and over 100 calculi were found in the bladder. An aged colored man was taken on the street with a desire to urinate, but could not. A physician passed a catheter and a profuse hæmorrhage followed. Dr. Smith was then sent for and found him suffering greatly from an inability to pass water. The bladder was distended and painful to pressure. It was with difficulty that he passed a catheter. Bloody urine was withdrawn and the bladder washed out. Some time after the man suddenly died, and at the post-mortem the prostate gland was found to be very much enlarged and there was a tear in the prostatic urethra.

DR. J. FORD THOMPSON: If the diagnosis could be made he preferred Harrison's operation. Such patients usually suffer, from time to time, from the obstruction, and there is probably some dilatation of the ureters. In such cases he would

perform the median operation, puncture the bladder and remove the middle lobe of the prostate gland; or the same result could be accomplished by epicystotomy. He thought that complete excision would have cured Dr. Edes' patient. Much smaller enlargements would obstruct the flow, and excision would be advisable.

DR. EDES: There had never been any retention of urine in the case, and the man had seldom gone more than four hours without having his urine drawn with the catheter, as he had a constant attendant for that purpose.

DR. J. FORD THOMPSON presented a limb amputated for

ARTHRITIS OF THE RIGHT KNEE.

Sarah Pinn, æt. 12, colored; father living, mother dead, cause of death not known. The patient was well up to one year ago, when she fell and injured her right knee. After a day or so she experienced no trouble until February, 1888, when it was noticed that her right knee was somewhat larger than the left, and she also complained of pain when walking. Her knee gradually grew larger until her admission to the hospital, September 1, 1888.

Present condition: General health seems to be good and she has the appearance of being well nourished. Physical examination of knee shows it to be about as large again as normal. On palpation she complains of pain on the inner side and a little below the joint.

October 14—Complains of great pain in knee. Was given morphia sulph. daily. Slight fluctuation can be detected on outer side, just above head of fibula.

October 16—Patient was anesthetized and an incision made over the knee joint, beginning just below the internal condyle of femur and passing anteriorly across the middle of the patella to a point corresponding on the outer side of the joint. The patella was then sawn through and the leg forcibly fixed on the thigh, which exposed the articular surfaces of the tibia and femur. The articular cartilages of the tibia were entirely gone and those of the femur so much diseased that they were removed with a saw. The internal tissues of the joint were extensively diseased and were all removed, including ligaments, leaving the posterior ligament intact. A thin slice of articular surface was removed by saw. After denuding the articular surface of the tibia the wound was irrigated with carbolic sol. 1-60. Two drainage tubes were then inserted with counter-openings above the knee externally and posteriorly. The denuded surfaces of tibia and femur were then brought in apposition and held by two silver wire sutures. After this the patella was wired together and the wound closed with six silk-worm gut sutures. The leg was then dressed antiseptically and placed in a plaster case.

October 17.—Owing to the fact that there was considerable oozing after the operation the dressings were removed and carbolized water injected to check the hæmorrhage. It was again dressed antiseptically.

October 22.—Drainage tubes removed; general condition much better, but no evidence of union between the bones.

November 1.—General condition good; is gaining flesh.

December 1.—Patient not doing so well; has two sinuses in knee which discharges bloody-looking pus. Temperature is of a hectic type.

January 1, 1889.—No evidence of union between the bones.

January 15.—Patient was anæsthetized and a semi-lunar incision made across the anterior surface of the knee just below the patella. The leg was then fixed, as in the first operation, and the softened tissue around the joint all removed with a sharp spoon. The wound was then closed with six silver wire sutures, dressed antiseptically and placed in a plaster case.

January 16.—Has been no evidence of shock; patient in good condition.

February 24.—Plaster cast removed; still no union between the bones; temperature continues to be of a hectic type.

March 10.—Is loosing flesh rapidly.

March 26.—At a consultation held the following physicians were present: Drs. Lovejoy, King, Johnston and Thompson. It was decided to amputate the limb immediately. The patient being anæsthetized, the limb was amputated just above the condyles (Long anterior flap method). The stump was dressed antiseptically and patient put in bed.

April 2.—Dressings removed; nearly all of the flap has united by first intention; general condition and appetite good.

DR. THOMPSON had referred to this case at the last meeting, and had said that he thought amputation would be necessary. At a meeting of the Consulting Staff of the Children's Hospital, held March 26, it was unanimously decided to amputate at once in order to give the girl the best chance of life. Dr. Lamb would present a section of the knee-joint at some future time.

Tri-State Medical Association.

*First Annual Meeting, held at Chattanooga, Tenn.,
October 15 and 16, 1889.*

(Concluded from page 716.)

DR. COOPER HOLTZCLAW read a paper entitled
REPORT OF TWO CASES OF LAPAROTOMY, WITH A
SPECIMEN.

Case 1.—Female, married, æt. 20. History of

pelvic cellulitis two or three years previous, followed by ascites which was evacuated several times. Uterus immovable, tumor size of a hen's egg, to right of Douglas' cul-de-sac and in rectum, gut painful to touch and on defecation.

Diagnosis: Ovarian cystic degeneration. Laparotomy June 8, 1888. Both tubes and ovaries adherent to all contiguous tissues. As many adhesions as possible were broken up and diseased tissue removed. Recovery slow; at present date good health.

Case 2.—Female, æt. 19, unmarried. History: January 1, 1888, noticed small floating tumor in the right iliac region, which gradually grew larger until she was as a woman at full term; considerable dyspnoea, irregular menstruation, anorexia, emaciation; xyphoid cartilage dislocated and painful; uterus normal; urine normal; heart normal but rapid and weak. Diagnosis: parovarian cyst. Laparotomy October 1, 1889. Removed large sac containing 2 gallons of fluid and colloid substance; pedicle small, short, and attached to parovary. Patient discharged on fifteenth day.

DR. J. F. LYNCH, of Chattanooga, read a

REPORT OF A CASE OF LAPAROTOMY.

The patient was a widow æt. 35. Had been an invalid for years. The operation was performed for pyosalpinx, which was ruptured in the attempt to break down the extensive adhesions and its contents emptied into the abdominal cavity. After the operation the abdomen became fearfully distended by an accumulation of gas in the intestines. To relieve this condition teaspoonful doses of Epsom salts were given every hour, enemata of turpentine and asafoetida were administered, and a tube passed some distance up the rectum through which numerous injections were given. Gas continued to accumulate and, having exhausted all means of relieving the distension, Dr. Lynch feared intestinal obstruction, and was preparing to operate again when, in the afternoon of the fifth day, she had a copious action from the bowels and the distension disappeared. The operation was performed under strict antiseptic precautions. The patient has entirely recovered.

These papers were discussed by Drs. G. A. Baxter, R. J. Trippe and W. C. Townes.

DR. TRIPPE related a case of ovariectomy of Dr. J. B. Cowan's. Cystic tumor of the right ovary in a woman æt. 25, single, domestic. Abdomen very much enlarged but symmetrical. Aspiration of a semi-solid, amber-colored fluid. The diagnosis of cystic tumor of the ovary was made, for which the doctors operated. A multilocular cyst of the right ovary was found, which was removed with the tube. Two of the cysts had been ruptured and it was estimated that there was 100 lbs. of fluid in the peritoneal cavity. The patient had

an uninterrupted recovery and was allowed to go out of the room in three weeks. She has remained well since and is earning her own living. He also reported a case in which he had performed laparotomy for stab-wound of the abdomen on a man æt. 38, in which the transverse colon was incised in two places. The incisions in the gut were oblique. There was an escape of faecal matter from the wounds, which were stitched with catgut. The intestines had protruded from the wound and had got in the mud, and afterwards been covered with a blanket which had been used for dogs to lie on. The exposure had been for about an hour. The incision in the abdomen was closed with a three line suture. The next day there was a temperature of 101.5° , which lasted but a short time. The man was up in two weeks.

DR. FRANK TRESTER SMITH, of Chattanooga, read a paper entitled, *Report of a Case of Persistent Pupillary Membrane*. The paper was illustrated with a drawing. No treatment was recommended.

DR. REEVES asked if the condition might not be due to the result of an inflammation?

DR. SMITH said that it was possible, but that the inflammation must have occurred *in utero*, as there was no structure other than the pupillary membrane that would leave a grayish substance on the capsule of the lens with threads running to the anterior surface of the iris and attached to the circulus iridis major, as in the case presented.

DR. MAX THORNER agreed that no treatment was indicated and no other diagnosis possible from the description of the case. He related a case which he had seen in which an operation was attempted but the result was not encouraging.

DR. JAMES E. REEVES read the original account of *Ephraim McDowell's First Ovariectomy*.

In an omnibus discussion which followed the subject of hypnotism came up and was discussed by Drs. G. W. Drake, J. M. Heard, W. C. Townes, G. A. Baxter and R. D. Boyd.

After the transaction of miscellaneous business the Association adjourned to meet again in Chattanooga, October 21, 1890.

I now forward another note by the same author on the treatment of chronic blenorrrhagia. This note is the summary of a clinical lecture delivered by the author at the Hôpital du Midi, and which is of some importance owing to the experience acquired by him. After having tried a great number of medications for this affection, Dr. Du Castel has been led to the following conclusions: Internal medication, so useful in acute cases, has a very contestable action on blenorrrhœa. The balsamics have appeared to be of some utility, but the mode of administration differs; it is no longer in high doses that they are administered, but in small quantity and during a long time. The veritable treatment of chronic blenorrrhagia is the local treatment. According to the experience of Dr. Du Castel, the porte-caustic of Lallemand, the topical remedies applied directly to the mucous membrane by means of the endoscopic tube, as also the medicamentous bougies and sprays, have given certain results, but which appeared to him inferior means as compared with the current methods, injections, lavages and instillations. The two first therapeutic means are chiefly indicated in acute blenorrrhagia, lavages appear more efficacious than simple injections, but they are of more difficult application. The solutions should be relatively concentrated; the caustic substances, such as the injection that bears the name of Ricord, or that of the three sulphates, are the most efficacious. As regards the antiseptic substances, they do not act so well as in acute urethritis. Of all the agents employed locally, instillations deserve the preference. As regards the solutions, those of the nitrite of silver produce a cauterization to the degree necessary to modify the mucous membrane; the strength of 1 to 50 parts often suffices. This is the method practiced by Professor Guyon which Dr. Du Castel has adopted, after having tried a great number of other means.

At a recent meeting of the Academy of Sciences M. Chauveau, the well known veterinarian, made an important communication on transformism in micro-biology, in taking, for example, the limits, the conditions and the consequences of the variability of the "bacillus anthracis." It results from the researches of the learned experimenter that, thanks to the persistence of the action of compressed oxygen on the cultures of the bacillus anthracis in course of development, one succeeds in creating races or types of less resistance than the primary bacillus, and which are particularly sensible to the influence of the attenuating agent which had procured for the bacillus its new properties. If this influence of the attenuating agent is prolonged, the new types lose the aptitude of vegetating in its contact. But, as long as the bacillus does not pass the limits of vegetability, it remains in the domain of pathogenic agents. It loses, it is true, all virulent property, but it preserves integrally the vaccinal

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

Dr. Du Castel on the Treatment of Chronic Blenorrrhagia—M. Chauveau on Transformism in Micro-Biology—Dr. Clado takes up the Question Whether the Liquids contained in the Herniary Sac should contain Toxic or Irritating Matters?

My letter in THE JOURNAL of August 3d last contains a note of Dr. Du Castel on the antiseptic treatment of blenorrrhagia in its acute stage.

property and preserves it almost intact during the whole duration of its existence. These new characters are fixed and are easily entertained by culture in successive generations. Thus, in considering these types in themselves, without taking into account their origin, they may be regarded as forming one distinct species. It would not be impossible that the special types of the bacillus anthracis exist in nature with properties absolutely identical with those of the created races, and entertained in the laboratory.

In a memoir published in 1861, Prof. Verneuil emitted the idea that the liquids contained in the herniary sac should contain toxic or irritating matters. In 1867 he caused the contents of a herniary sac to be examined by Dr. Nepven, who found micrococci. At one of the sittings of the last Congress of Surgery, Dr. Clado, of Paris, took up the question. A man aged about 30 years, vigorous, and the subject of a reducible congenital hernia, was admitted into the Pitié Hospital with the signs of a strangulated hernia. He was operated on on the following day, sixteen hours after the commencement of the accidents. The temperature of the body was 36° C. at the time of the operation. Death took place one hour after. In the contents of the sac, examined immediately, there were found numerous bacteria, mobile, with which he made some cultures. These bacteria were found again the next day in the blood, the peritoneal serosity of the patient, and in the incisions made in the viscera (the spleen and the lungs). In the strangulated knuckle there were the same microbes as in the glands, the blood-vessels and lymphatics. The cultures furnished one special bacterium, which, cultivated at 28° C., proved to be inoffensive, whereas when cultivated between 37° C. and 40° C., it becomes mortal in a few hours. The inoculation of the blood of the patient produces the death of animals in a very short time. In fine, the inoculation with the serosity or with the blood of animals caused death in series. The microbe proved itself particularly pathogenic for the guinea-pig and the rabbit. In the dog it produced vomiting, inappetence, followed by complete recovery. The bacterium multiplied itself with astonishing rapidity in the organism of the animals. To explain the cause of death, particularly rapid death, in cases of hernia, nervous exhaustion was suggested, the constriction of the filaments of the great sympathetic nerve, the overdistension of the abdomen with gas, visceral congestion, particularly of the lungs, finally stercoræmia. Dr. Clado explains death in strangulated hernia by the penetration into the economy of a bacterium having for its starting point the surface of the intestine. Visceral congestions, frequently observed, are the result of the localization of the bacteria in the viscera, and particularly in the lungs. Herniary peritonitis and gen-

eralized peritonitis without opening in the intestine are the result of the migration, through the intestinal pariet, of the bacteria into the peritoneum. Dr. Clado admits that the distension of the intestinal knuckle by gas pushes these microbes into the thickness of the ulcerated mucous membrane.

A. B.

DOMESTIC CORRESPONDENCE.

"Professional Organization."

To the Editor:—Your editorial of September 28th on "Professional Organization" is not likely to be without a response from the many physicians whom it concerns. This is the age of organizations, and while every true member of the medical profession would decry an association having for its chief aim the selfish advancement of the individual or a favored few, yet we all have a right to urge that which will bring the members of our guild into closer relationship.

For many years the American Medical Association has stood, in numbers and importance, far beyond any other; but now we have new organizations which, though they may never rival the national body, are yet representative and growing larger each year. These societies, it seems to me, are midway in the large distance which lies between the American Medical and the State associations, and are composed mainly of men who are members of both.

These district societies are well organized and are sure to continue. The question to be answered is, shall their interests and that of the American Medical Association be united? That such union would be of mutual advantage seems apparent for several reasons.

1. As already suggested, a better system of collective investigation of disease could be instituted.

2. Questions which cannot fully be discussed in the American Medical Association, for want of time, could be referred to one of the branches. This could be well done where questions arise pertaining to variations of disease peculiar to certain latitudes or geographical sections.

3. THE JOURNAL of the Association would, by the adoption of some such plan as suggested in the editorial referred to, be strengthened and become even more than at present the representative national journal.

4. There would be a better union and closer fellowship among the members of the different societies, many of whom are unable to attend the American Medical Association regularly.

Possibly five branches might be formed, one in New England, one in the Middle States, another in the South, and one on the Pacific coast, while the Mississippi Valley Medical Association could

easily represent the territory implied by its name. There is strength in the very thought of such a wide-reaching organization. At the national meeting and its branches we can have each year a registration of 10,000 physicians as easily as we now have one-fifth of that number.

It seems to me that, in justice to the thousands of physicians in America, as well as for the best interests of the American Medical Association, this question should be thoroughly discussed.

Respectfully,

WM. PORTER.

St. Louis, November 12, 1889.

BOOK REVIEWS.

DISEASES OF WOMEN. A Manual of Non-Surgical Gynecology Designed Especially for Students and General Practitioners. By F. H. DAVENPORT, A.B., M.D., Assistant in Gynecology, Harvard Medical School; Assistant Surgeon to the Free Hospital for Women, Boston, etc. With 105 Illustrations. Octavo, pp. xiv, 292. Philadelphia: Lea Bros. & Co. 1889.

In this modest volume the author has endeavored to set before the student the elementary principles of the methods of gynecological examination, together with the simple forms of treating the most common diseases of the pelvic organs, and to assist the general practitioner in understanding and treating the gynecological cases of his everyday practice. Surgical gynecology and pathological anatomy have been omitted, for the most part, with a view to make room for a description of many minor points which are often wanting in other works. It is not too much to say that the author has carried out his plan in an admirable manner, with the result of producing a thoroughly practical and useful work which, while it commends itself particularly to the beginner, contains much of value to the practical gynecologist; thus his chapter on "Displacements of the Uterus," which includes the methods of diagnosis, the use of the probe, and the instructions for measuring the vagina and applying pessaries, would do credit to a very much larger and more pretentious treatise. The work is certainly a very attractive one, and is of a character to encourage the hope that another and enlarged edition will soon be required.

TRANSACTIONS OF THE LOUISIANA STATE MEDICAL SOCIETY, held at New Orleans, April 9, 10 and 11, 1889.

The report of the work done by the Louisiana State Society for the past year speaks well for the earnestness and zeal of its members. The papers read were numerous, interesting and varied in

character. Three of the most extensive papers were read by Dr. Joseph Jones, who discussed at length the subjects of the care of the insane, the relations of quarantine to commerce and the action of antipyretics in febrile diseases. These are notable papers and deserve a careful reading. Interesting contributions to surgery were made by Dr. R. Matas on "Multiple Subperiosteal Sarcoma of Skull" and "Circular Enterorrhaphy;" by Dr. G. B. Lawrason on "Two Cases of Hysterectomy;" and by Dr. E. Souchon on "The Drilling of Capillary Holes through the Skull for the Purpose of Exploration with the Hypodermic Needle."

SAUNDER'S QUESTION-COMPENDS, NO. 1, ESSENTIALS OF PHYSIOLOGY. Arranged in the form of questions and answers; prepared especially for students of medicine by H. A. HARE, B.Sc., M.D., Dem. of Ther. and Instructor in Physical Diagnosis in the Univ. of Penn., etc., etc. Second edition, revised and enlarged; pp. x, 193. Philadelphia: W. B. Saunders. London: Henry Renshaw. Melbourne: Geo. Robertson & Co. 1889.

While open to many of the criticisms which assail medical compends designed for students, this little work is deserving of much praise as being a very excellent one of its class. Students no doubt often abuse themselves by doing superficial work and glossing over their real ignorance with a little of the more easily acquired knowledge; but, nevertheless, if properly used such books may be made to greatly lighten the tasks of the already overburdened under-graduate. We do not hesitate to pronounce this such a book. Not the least of its many excellencies is the admirable selection of the illustrations, which are uniformly above reproach both in accuracy of design and mechanical execution.

TRANSACTIONS OF THE IOWA STATE MEDICAL SOCIETY. Vol. VII, 1886-1889.

This volume of Transactions covers the work done by the Society in four years. It comprises sixty-one papers, nearly all of which may be said to be rather meagre, as may be judged by the fact that they find plenty of room in a book of only 564 pages. The work accomplished is very good as far as it goes, but the Society evidently needs tonic treatment to prevent premature decay. From such a magnificent State as Iowa it is not too much to expect the very best of work.

PHYSICIAN'S LEISURE LIBRARY—DYSPEPSIA. By FRANK WOODBURY, M.D. Pp. 86. Detroit: Geo. S. Davis.

This is an excellent thesis reviewing the newest knowledge that has been acquired and that is pertinent to the subject. The book is not a systematic treatise but rather a fresh, interesting and

suggestive one. Both the symptomatology and treatment are discussed. Dr. Woodbury insists upon defining dyspepsia as a general disease which is due to poisoning of the system with the products of imperfect digestion and of gastric fermentation. In the closing chapter the subject of dietetics for dyspeptics is considered.

THE AMERICAN ARMANENTARIUM CHIRURGICUM. Imperial 8vo. 1889. New York: George Tiemann & Co.

We are in receipt of a copy of this finely printed and handsomely bound volume. It contains 862 pages, 3,400 engravings, and descriptive matter of surgical instruments and appliances. The text is fuller than is usually found in trade catalogues, and is a credit to the enterprising firm issuing it. The work is supplied to the profession at about the cost of the binding.

TRANSACTIONS OF THE AMERICAN SURGICAL ASSOCIATION. VOL. VII. Edited by J. EWING MEARS, M.D., recorder of the Association. Philadelphia, 1889.

The elegant typography and binding of this volume are fully justified by the valuable material which it contains. Fifteen articles fill the 217 pages of the book. Nine of these are chiefly or entirely devoted to the reporting of cases, and the remainder are for the most part systematic studies.

Dr. Stimson advocates the attempt to ligate separately the arteries in pedicles of abdominal growths instead of treating the stump as a whole.

An article on digital divulsion of the pylorus for cicatricial stenosis, by Dr. J. M. Barton, is instructive and timely.

Dr. McGraw, of Detroit, contributes to the history of gunshot wounds of the intestines.

Dr. Maurice H. Richardson reports upon the surgical treatment of gangrenous hernia in four cases that he observed.

The papers read before this Association are of a high order of merit, as would be expected from the *personnel* of the Society, and the present volume will be a valuable addition to the surgeon's library.

WOOD'S MEDICAL AND SURGICAL MONOGRAPHS. Vol. III, No. 3, Sept., 1889. William Wood & Co., publishers, New York.

This number contains the following excellent monographs: "Congestive Neurasthenia or Nerve Depression," by E. G. Whittle, M.D.; "The Art of Embalming," by Benj. Ward Richardson, M.D.; "The Etiology, Diagnosis and Treatment of Tuberculosis," by Dr. H. von Ziemssen; "Psycho-Therapeutics, or Treatment by Hypnotism," by Dr. C. Lloyd Tuckey; "Sexual Activity and the Critical Period in Man and Woman," by Dr. Louis DeSéré.

NECROLOGY.

Mr. George Buck.

The Chicago College of Pharmacy announces with regret the death of its President, Mr. George Buck, of the firm of Buck & Raynor.

Mr. Buck was born in Rochester, England, in 1827, and previous to coming to the United States had received a thorough training in pharmacy. Arriving in New York in the summer of 1855 he was engaged for J. H. Reid & Co., then the leading retail firm in Chicago. He remained with this firm as prescription clerk until 1859, when, with Mr. Raynor, also an employé of J. H. Reid & Co., he started in business near the corner of Clark and Washington streets, then a residence neighborhood. The early success and continued prosperity of the firm were due largely to the admitted competency and integrity of its members.

Mr. Buck was an early and consistent advocate of thorough pharmaceutical education, being one of the charter members of this college and having from the first taken a prominent part in its management. He was also prominent in the movement to secure for Illinois the enactment of a pharmacy law, his efforts in that direction dating from 1870, ten years before a law was finally secured.

He was the first president of the State Board of Pharmacy, and had been president of this college continuously since 1886.

He was widely known and universally respected, both by the profession and the people, as a man of high moral worth and sterling integrity, and his death is universally regretted.

Chicago, October 7, 1889.

Dr. James W. Kerr.

DR. JAMES W. KERR died at his residence in York, Pa., on Monday June 10, 1889, in the 76th year of his age. He was born in Lancaster County, Pa., and graduated in medicine at the University of Pennsylvania in 1840. He was an Assistant Surgeon in the late war, and a member of the American Medical Association since 1848.

J. S. M.

Dr. Alexander R. Blair.

DR. ALEXANDER R. BLAIR died at his residence in York, Pa., on Thursday, July 16, 1889, in the 63d year of his age. He was born in Lancaster County, Pa., and received his degree of M.D. from the Jefferson Medical College, Philadelphia, in 1853. Dr. Kerr and Dr. Blair were the organizers of the York County Medical Society and members of it at their death. They were members of the State Medical Society. Dr. Blair joined the American Medical Association in 1858. He also served as Assistant Surgeon during the late war.

J. S. M.

MISCELLANY.

PARIS EXHIBITION.—Wm. R. Warner & Co., the well-known manufacturing pharmacists of Philadelphia, were awarded a silver medal at the Paris World's Fair in recognition of the excellence of their pills and effervescent salts. This is the thirteenth World's Fair medal that Warner & Co. have received.

HEALTH IN MICHIGAN.—For the month of October, 1889, compared with the preceding month, the reports indicate that scarlet fever, puerperal fever, influenza, pneumonia, diphtheria, pleuritis and typhoid fever increased, and that cholera infantum, cholera morbus, dysentery, cerebro-spinal meningitis, diarrhoea and measles decreased in prevalence.

Compared with the preceding month, the temperature in the month of October, 1889, was much lower, the absolute humidity was considerably less, the relative humidity was slightly less, the day ozone and the night ozone were less.

Compared with the average for the month of October in the three years, 1886-88, inflammation of brain, diarrhoea, typhoid fever, pneumonia and puerperal fever were more prevalent, and cerebro-spinal meningitis, cholera infantum, membranous croup, diphtheria, erysipelas and measles were less prevalent in October, 1889.

For the month of October 1889, compared with the average of corresponding month in the three years 1886-'88, the temperature was lower, the absolute humidity, the relative humidity, and the day and night ozone were less.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of October, 1889, at 63 places, scarlet fever at 54 places, typhoid fever at 113 places, and measles at 15 places.

Reports from all sources show diphtheria reported at 29 places more, scarlet fever at 34 places more, typhoid fever at 66 places more, and measles at 8 places more, in the month of October, 1889, than in the preceding month.

LETTERS RECEIVED.

Dr. T. D. Crothers, Hartford, Conn.; Dr. G. H. Gibson, Denver, Col.; Dr. J. W. Emmons, Sparta, Wis.; Lutz & Movius, New York; Codman & Shurtleff, Boston; I. Haldenstein, New York; S. R. Niles, Boston; C. N. Crittenton, Fairchild Bros. & Foster, New York; John H. Berry, Boston; Dr. A. F. Stifel, Wheeling, West Va.; Dr. James L. Taylor, Wheelersburg, O.; The Physicians', Dentists' and Druggists' Insurance Association, Chicago; Dr. E. Cutter, New York; Dr. M. C. Farrar, Fort Madison, Ia.; O. H. Merrill, Coriunna, Me.; Dr. A. I. Hummell, Philadelphia; Dr. W. E. Casselberry, Chicago; A. A. Marks, New York; Dr. H. Judd, Galesburg, Ill.; W. P. Cleary, New York; Dr. J. H. Maine, Fort Wayne, Ind.; J. H. Bates, New York; Dr. John N. Mackenzie, Baltimore, Md.; B. Westerman & Co., New York; Charles H. Phillips Chemical Co., New York; William R. Warner & Co., Philadelphia; Dr. Roeth, Boston; Gross Medical College, Denver, Col.; Dr. Joseph D. Couch, Somerville, Mass.; Dr. B. J. Loomis, Marshalltown, Ia.; Dr. L. Round, Dighton, Kan.; Dr. E. F. Brush, Mount Vernon, N. Y.; Dr. J. H. Williams, White Pigeon, Mich.; Dr. P. R. Hardie, Hampton, N. C.; Dr. E. M. Nelson, St. Louis, Mo.; Dr. F. B. Davidson, Fleetville, Pa.; Dr. Joseph A. White, Richmond, Va.; Dauchy & Co., New York Dr. Charles C. Browning, New York; Dr. C. R. Ammeian, Colorado City, Col.; Dr. J. T. Wilson, Sherman, Tex.; E. B. Treat, New York; Dr. W. M. Harsha, Decatur; Scott & Bowne, New York; Dr. Henry O. Marcy, Boston; Ira Peregó & Co., New York; Dr. L. H. Ding, Indianapolis, Ind.; The Guaranty Investment Co., New York; Armour & Co.,

Chicago; Dr. E. H. King, West Liberty, Ia.; Dr. Wm. Creighton Woodward, Philadelphia; Dr. A. G. Ochsner, Chicago; Thomas Leeming & Co., New York; Dr. Charles H. Haningan, Olympia, Wash.; W. H. Schieffelin & Co., New York; Henry G. de Forest, Long Island, N. Y.; Dr. W. B. Anderson, Rice's Crossing, Tex.; Dr. A. E. Priuce, New York; Dr. Samuel P. Duffield, Detroit, Mich.; Dr. Irving D. Wiltrout, Hudson, Wis.; Lehn & Fink, New York; Dr. J. C. Buchanan, Winnsboro, S. C.; E. Steiger & Co., New York; Dr. Charles E. Davis, Fort Wayne, Ind.; Dr. Wm. D. Babcock, Los Angeles, Cal.; Dr. J. M. Barrier, Illawara, Ia.; Medical & Surgical Sanitarium, Battle Creek, Mich.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from November 9, 1889, to November 15, 1889.

Capt. C. N. B. Macauley, Asst. Surgeon, is granted leave of absence for one month, to take effect about the 29th inst. Par. 2, S. O. 166, Dept. of the Missouri, Ft. Leavenworth, Kan., November 8, 1889.

The following changes in the stations of medical officers serving in this Department are hereby made, viz.:

Capt. L. W. Crampton, Asst. Surgeon, from Ft. Lyon, Col., to Ft. Sheridan, Ill.

Capt. W. H. Corbusier, Asst. Surgeon, from Ft. Hays, Kan., to Ft. Lewis, Col.

First Lieut. F. J. Ives, Asst. Surgeon, from Ft. Lyon, Col., to Ft. Sill, I. T. Par. 3, S. O. 167, Hdqrs. Dept. of the Missouri, Ft. Leavenworth, Kan., November 9, 1889.

By direction of the Secretary of War, Capt. Louis M. Maus, Asst. Surgeon, having relinquished the leave of absence on surgeon's certificate of disability granted him in S. O. 249, October 25, 1889, from this office, will, upon being relieved from duty at Ft. Porter, N. Y., as directed in S. O. 242, October 17, 1889, from this office, proceed without delay to Ft. Stanton, N. M., and report in person to the commanding officer, Dept. of Arizona. Par. 8, S. O. 261, A. G. O., Hdqrs. of the Army, Washington, November 8, 1889.

By direction of the Secretary of War, the following assignments of officers of the Medical Department (recently appointed) are ordered:

First Lieut. Charles Willcox, Asst. Surgeon, will report to the commanding officer at Ft. Columbus, N. Y., for duty at that station.

First Lieut. Harlan E. McVay, Asst. Surgeon, now at Ft. Mackinac, Mich., will report in person to commanding officer of that post for duty.

First Lieut. Euclid B. Frick, Asst. Surgeon, will proceed from Philadelphia, Pa., to Ft. Keogh, Mont., for duty at that station.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending November 9, 1889.

Surgeon George Purviance, granted leave of absence for twenty-one days. November 8, 1889.

Surgeon H. W. Austin, to inspect unserviceable property at St. Louis Marine-Hospital. November 4, 1889.

Surgeon J. M. Gassaway, relieved from duty at New Orleans, La.; to rejoin station at Cairo, Ill. October 23, 1889.

P. A. Surgeon C. E. Banks, granted leave of absence for thirty days. October 28, 1889.

Asst. Surgeon J. B. Stoner, ordered to Vineyard Haven, Mass., for temporary duty. November 6, 1889.

Asst. Surgeon A. W. Condict, ordered to Cairo, Ill., for temporary duty. November 4, 1889.

Asst. Surgeon G. M. Guiteras, ordered to Washington, D. C., for temporary duty. November 8, 1889.

Asst. Surgeon J. F. Groenevelt, ordered to New York, N. Y., for temporary duty. November 5, 1889.

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No. 22.

ADDRESSES.

THE AMERICAN ACADEMY OF MEDICINE;

ITS OBJECTS; ITS SIGNS OF PROMISE AND ITS
OBSTACLES; ITS FIELD OF WORK; AND
SOME SUGGESTIONS LOOKING TO AN
INCREASE OF ITS EFFICIENCY.

*Address of the President delivered at the Annual Meeting in Chicago,
Ills., Nov. 13, 1889.*

BY LEARTUS CONNOR, A.M., M.D.,
OF DETROIT, MICH.

Fellows of the American Academy of Medicine:
—By one of those strange freaks that make the action of otherwise clear headed people unaccountable, you last year elected me to the office of your chief servant. As I was unavoidably absent from the session during which this action was taken, I did not learn of it until many hours after you had adjourned. Hence, nothing was left me other than to endeavor to understand and execute your wishes. Respecting the outcome of my service you are all in position to judge. The new plans of operation, proposed by Dr. Gerrish last year and adopted by the Academy, called for the appointment of several new committees, whose reports speak for the wisdom of the changes and the faithful service of these committees. In general it seems to me that the changes, and the individuals, who at much personal sacrifice have rendered them so successful, deserve the full approval of the Academy.

For the first time in its history the Academy holds a meeting in the West. For the first time, it comes into personal contact with the mighty material forces clustering about the great lakes, the vast rivers of the American Continent, the boundless prairies, and the pure breezes that starting far up in the heavens by the tops of the Rockies, sweep for thousands of miles over fertile plains. For the first time, it gazes upon the marvellous civilization that has sprung, like Aladdin's lamp, in the vast garden that is bounded by the great lakes, the Gulf of Mexico, the Alleghanies and the Rocky Mountains. Within this area, is being developed a civilization having the largest and most favorable conditions for gigantic growth, untainted by the dis-

turbing influences of Europe or Asia, as the obstruction of vast mountain chains separate it from ready access to the great ferries which ply the Atlantic and Pacific. Here, if anywhere, will appear the typical American. Here, if anywhere, will be seen the greatest differentiation from all other peoples and races on the earth, and the most perfect blending of all types under the influence of the governing Anglo-Saxon direction. Here, if anywhere, will be seen the product of the richest soil, the most varied climate, the most perfect air, the purest water, the grandest forests, and the most majestic rivers. Here men and women do and dare all things in their efforts to bring under subjection, the countless natural riches everywhere found in such profusion. Into this atmosphere, most typically represented in this its largest city, the American Academy of Medicine for the first time comes. That it will grasp some idea of the medical needs of this superb region, and be able to initiate such schemes as will result in their early supply, is assured. That the Fellows will better appreciate the problems before them, see additional grounds for encouragement, and appreciate more definitely the obstacles to be met and overcome, is our hope. Within this vast area is a teeming population, the parent of millions who within a short time will occupy these fat places. The medical profession throughout it are in a plastic state of development. Now, better, than ever after it can receive and execute lessons of its matchless opportunities, and the measures requisite for their best improvement.

Some have said that the American Academy of Medicine is founded upon a new idea, a "fad" born of an aristocratic modern notion. As a fact, we find that Hippocrates standing at the dawn of historic medicine, urged earnestly that "the preliminary training of medical men be made as broad and as deep as possible." Farther, by precept and example the same idea has been maintained by all the famous medical men from Hippocrates to Alonzo Clark, as was abundantly shown in the eloquent and scholarly address of Dr. George Jackson Fisher, last year. We, the lineal descendants of the worthies, are simply endeavoring to maintain the faith once delivered to the "fathers," thousands of years ago. Our

mission is to galvanize into life, the truth of the importance and value of a preliminary education, that has become obscured by the overshadowing influence of commercialism. We strive to aid in the establishment of such conditions as will ensure the possession by every medical man of such general knowledge of literature, science, art and trade in their broadest as well as narrowest relations, so that he may rank as a real teacher, companion and friend of the cultured and the uncultured. We rejoice that the medical profession contains large numbers of such men, but the Academy would have them universal, the rule not the exception. The change which the attainment of this end *would make*, is illustrated by the change which occurred in the classes of the Harvard Medical School during the interval from 1870 to 1880. On the former date it will be remembered that this school raised its standard of preliminary requirement, and proportionately its general curriculum. In brief it began to teach modern medicine in a rational manner. President Elliot in describing this change says: Until 1870 the students in the medical class of Harvard were noticeably inferior in bearing, in manners, and in discipline to the students in other departments; now they are indistinguishable from other students." He adds, "a corresponding change in the medical profession at large would be effected in twenty years if all the medical schools of the country would institute a reasonable examination for admission. Under the present order of things, the American Physician and Surgeon may be, and often is, a coarse uncultivated person, devoid of intellectual interests outside of his own calling, and quite unable to speak or write his mother tongue with clearness and accuracy." To set into operation agencies which will enable all medical students to rank with any other professional students in gentlemanly bearing, and supplant the coarse ill bred, ignorant physician by one who can comprehend the intellectual forces operating in the community about him, and who can meet on equal terms any individual who has become possessed with the intellectual training of his time, such is the mission of the Academy.

Then, if ever such a time comes, will the degree of doctor of medicine be an introduction and passport to any and every class in any community. Then, medical men will take rank among the leaders in all things pertaining to the best interests of the communities in which they live. Until then the physician's diploma avails for naught except as a license to practice medicine, in some States. Its general worthlessness becomes more and more apparent as State after State refuses to accept it because of the lack of uniformity of the knowledge which its possessor may have acquired. Until a change is brought about such as the Academy seeks, each doctor

must introduce himself, pass his individual examination before the guardian Board of the State in which he desires to live, and before the cultured people in the community among whom he casts his lot. Having passed these examinations successfully, he occupies a place in the community such as his personal merit has won just as does the blacksmith or farmer. The London *Lancet* stated the case as follows: "If medicine is to acquire and sustain a high respect for its membership, such as is given men of science, art and other professional callings, its membership must be equipped with all the richer learning which is required to hold its own in a world that is daily becoming more cultured, and will certainly demand more of its medical advisers. Its members must have large physical and mental energy, capacity for long continued efforts, an unselfish devotion to their work, and a high moral life. The practitioner of the future must know more than his father knew, and know it in a different manner. Here and there one may leap over all obstacles, and in spite of unfortunate antecedents mount to the front rank. But the vast majority of the medical profession can reach that rank only by the most thorough and systematic cultivation of every physical, mental and moral faculty before they enter upon the study of medicine. Then if ever the physician must make the acquaintance of the great world of literature, philosophy, art, poetry, language, etc., which has been growing out of the labors of countless hosts who have lived, and by their toils made it possible for us to accomplish more than they in the short span of human life. At such time or never the student must master the objects and forces, beneath the earth's surface, upon the earth's surface, and above the earth's surface. By microscope and telescope, and all other scopes, by retort and test tube, by heat, light, electricity, chemical force and gravitation, he must follow the great teachers into the revealed mysteries of nature. Only thus can he come to know something of himself, and of the human beings whose ills he would learn to prevent, remove or alleviate. Only by such training can he hope for a manly development, which will rank him with the best educated men of the world." To increase the number of those who shall thus stand as the representatives of medical science and art, is the crowning glory of the Academy's labors.

But the objection is made such development will not pay; it costs too much time, too much money, for the return in fees. To this I reply that the history of medical men shows clearly:

1. Those, who enter upon the study and practice of medicine for the fees they hope to receive, have made a fatal mistake. They had better, at once, devote their time and energies to some calling in which it was possible to accumulate large

fortunes. The pure tradesmen has no place in the temple of medicine more than he has in the temple of religion. He may don the horse's skin to cover his own, but the donkey's ears will stick out and betray him. He may be sure that at some time the Master will enter and drive from the Temple "the money changers and those who sell doves."

2. The highest honors, the largest fees, the most enduring renown, the greatest glory, have, during all historic time come to such physicians as have, first and last, sought the uplifting of the profession to which they belonged. In the language of the Great teacher "those who have sought the Kingdom of God, have also had added to them all other earthly things." In brief it is certain that medical men developed and equipped as we have desired, would reap the very highest fees, the most distinguished honors that earth can give. We trust that this Academy may in the near future make plain to the world that its principles once fully enforced by the profession, would be attended by a vast increase of the solid cash.

It is fitting, from time to time, to look over the field in which we labor and note the progress made in its cultivation, and the signs of promise for the future. Of these I note a few for our encouragement. In truth it must be said, that the Academy is but one of numerous agencies, all striving toward the accomplishment of the same end, by diverse routes. All of these we cordially welcome, and wisely seek to increase in efficiency and to multiply.

1. It will be remembered that last year the College of Physicians and Surgeons of New York, placed in active operation a preliminary examination of considerable severity. The result shows that its classes maintained a size entirely unexpected, though gratifying to the friends of an increased preliminary education. In some other medical colleges the increase of preliminary requirement was attended by equally satisfactory results.

2. Better than this because of larger scope and indicative of a wider interest in preliminary education, is the action of the last New York State Legislature in enacting the following:

"Before the regents of the State of New York, or the trustees of any medical school or college within this State, shall confer the degree of doctor of medicine upon any person who has not received the baccalaureate degree in course from a college or university duly authorized to confer the same, they shall require him to file with the secretary or recording officer of their university or college, a certificate showing that prior to entering upon the study of medicine, he passed an examination conducted under the authority, and in accordance with the rules of, the regents of the University of the State of New York, in

arithmetic, grammar, geography, orthography, American History, English Composition, and the Elements of Natural Philosophy, and such certificate shall be signed by the secretary of the regents and countersigned by the Principal or Commissioner conducting the examination."

This enactment shows that the principle for which the Academy contends has been adopted by the State of New York. The examination is low, and the enactment imperfect in some details, but as a whole it is a great step in advance. We can rely upon the spirit which prompted, and the intelligence which formulated *the enactment* to eliminate imperfections, and advance the requirements as public sentiment shall desire.

3. It is meet that the Academy should take heart, because the enemies of the Illinois State Board of Health failed to accomplish its ruin this year. Its position, that no diploma will be recognized as entitling its possessor to practice medicine in Illinois unless given by a medical college which requires a definite preliminary examination, still remains the law of this State, and is enforced. The service of this board in teaching the doctrine of the absolute necessity of some preliminary requirement of medical students before entering upon college training, has been of incalculable value. It is doubtful whether any moral suasion would have been so effective, with the medical colleges, the medical profession, and the laity and other State Boards of medical examiners. As the pioneer of teaching this doctrine by law it will ever retain the gratitude of such as are able to appreciate its difficulties. Profiting by its success and failure, other boards have been established upon a higher plane, but all cheerfully acknowledge their debt of gratitude to this board.

4. The results exhibited by the Minnesota State Board of Medical Examiners, under the last phase of its development, are especially encouraging. Under the old Act, Minnesota licensed in 1885 one hundred and forty-six physicians. During the following two years the State rapidly increased in population, and yet under the last Act only one hundred and forty per year were licensed during the two following years. At the examination held October, 1889, of seventeen applicants only twelve were licensed. From this statement we are prepared to hear that Minnesota has but one physician to thirteen hundred people, while in the rest of the States it is affirmed that one physician exists to every five or six hundred people.

The last Act, in brief, requires all persons, desiring to begin the practice of medicine in Minnesota, to pass a scientifically practical examination by a Board independent of all medical schools. No candidate is admitted to examination unless he presents a diploma from a medical school that requires a preliminary examination upon the fol-

lowing branches: English grammar, composition, geography, algebra, physics and natural sciences, together with one of the following languages: Latin, French or German. In addition, the college must require attendance upon at least three full courses of instruction of not less than six months duration, before conferring the degree of doctor of medicine. The practical result of this law has been to restrict the number of new men who have entered upon the practice of medicine in Minnesota, and very greatly elevate the general and special training of the new members. It has also given a stimulus to medical colleges in their efforts to advance the standard of preliminary requirement. It must be that in the near future the profession of Minnesota will possess a higher grade of general culture and professional acquirement than in the past, or than is possessed by other States. As this accords with the aims of the Academy, it can rejoice in such tangible proof of progress.

5. In Montana, Virginia, North Carolina, etc., there are also laws bearing upon the increase of the preliminary requirements of medical students. While these are less radical than the Minnesota Acts, they contain the seed which is sure to grow until they have equalled if not surpassed the foremost.

6. At the late meeting of the American Medical Association Dr. Millard, so long actively engaged in the reformatory work in Minnesota, presented a scheme urging the adoption of such measures as would result in the adoption, by each State, of the Minnesota Acts. His idea was regarded with favor by those present. That difficulties attend its speedy realization does not render it less appropriate that we should accept it as an indication of the development of our cherished principles. We are ready to grant that law cannot accomplish all the reform we seek, still we must admit that law can do much in numerous directions otherwise unattainable. It can lay its heavy hand upon the wilful transgressor, and make him respect the forms of propriety. The discussion of such laws incident to their formulation in each State, to their passage through the legislatures and to their enforcement, compel attention from millions of the laity, and thousands of the profession, who otherwise would not give the matter a moment's thought. Medical colleges would thus learn that they cannot with impunity, for trade, prostitute the profession to which they belong. The law can make it profitable for the colleges to adequately increase their preliminary and other requirements.

7. The pharmacists, at their last annual meeting, bewailed the low condition of the general culture of their craft, and endeavored to formulate some plan by which such culture could be increased. They sought to have the professional side of their calling occupy a more prominent

share of attention. The preliminary requirement suggested as fitting for those who desired to enter upon the study of pharmacy compares favorably with that of most medical colleges, which enforce any preliminary examination. Thus in many directions the spirit of reform is abroad. While it works slowly, it is surely coming to the front.

(To be concluded.)

ORIGINAL ARTICLES.

THE POSSIBLE DANGER OF INJURY TO THE MIDDLE EAR CAVITY BY THE USE OF NASAL ATOMIZATION, ILLUSTRATED BY THREE CASES.

Read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, held at Newport, June, 1889.

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In calling attention to the few facts which I am about to lay before you, I am aware of my trespassing upon what might be called sacred territory and, therefore, do not come before you with ill-advised and hastily drawn conclusions. I know I shall meet with considerable skepticism, for such is usually the lot of those who lay bare possible injurious effects of previously considered harmless therapeutic agents, especially after they have become the cherished idol of the whole profession. I can but think that the skeptics will be vastly in the minority when I have summed up the result of my labor. I shall first give you several illustrative cases, followed by several experiments and conclusions. The object of this paper is to call your attention to the possible danger of injury to the middle ear as a result of nasal atomization, especially if such pressure is direct, as in the Davidson and Snowden atomizing tubes. Two of these cases developed in my own practice during the last year. Latterly I have been more guarded in the use of sprays and the amount of pressure used, and, on this account, have not had the misfortune to meet with any further mishaps.

Case 1.—That of a woman 27 years of age; married. Came to me during the month of December on account of a post-nasal catarrh attended with the secretion of an excessive amount of mucus. On the 10th of January I admitted her to my consultation room, immediately after dismissing a patient having an atrophic rhinitis, on whom I had been using a spray of high pressure to remove the adherent mucus from the nasal cavities. I began the treatment on this day, as usual, by the spraying of the nasal passages with a modified Dobell's solution. I forgot the high pressure, and as I began to spray the left nasal

cavity she involuntarily drew back, made an attempt at respiration, immediately followed by an explosive cough. I quickly cut off the spray. Quickly recovering her power of speech she remarked that she experienced a sensation as though the sprayed fluid had entered directly into her left ear. I assured her that it was impossible for any of the fluid to have entered the ear, and after pursuing the treatment in a more cautious manner dismissed her. About 11 o'clock of the same evening I was somewhat surprised at receiving a summons to call at her house at once. I was informed that her ear had given considerable annoyance since leaving my office. Her pain was great and radiated over side of head and along course of Eustachian tube; remitted almost entirely during next day, and on the third disappeared. Effusion rapidly set in and was attended with considerable deafness, roaring in the ears and resonance of voice. The appearance of membranes I did not note, but remember them as being those of a typical case of otitis media acuta.

Case 2.—This case occurred in a gentleman, single, 45 years of age. This patient consulted me during the winter on account of a great hoarseness from which he had suffered since contracting a cold several weeks before. On examining his larynx I found a marked paralysis of the thyro-arytenoidei interni and considerable congestion of the vocal cords. On investigating further I discovered quite a severe pharyngitis and naso-pharyngitis, while in the right nasal cavity there existed a spur, cartilaginous, completely blocking that cavity. His voice was restored and the pharyngeal trouble improved as much as could be expected with the nasal deformity still existing. In March he returned and requested that I should remove the septal spur. I operated on the 2d of March, using cautery knife, with the happiest result—perfect and all sufficient nasal respiration through the right cavity. Everything progressed favorably until the 14th; the septal wound had almost completely healed, and nowhere was there evidence of any inflammatory trouble. On this day I used a little greater pressure in air compressor, in order to remove the small crusts that had formed around the edges of the septal wound. While using the spray the patient remarked, "Why, doctor, that certainly entered my ear." Being quite positive that my patient had not erred in judgment I abstained from further treatment. Before dismissing him I made a post-nasal examination and found this cavity in quite a normal condition—no evidences of any acute inflammatory trouble. I expected trouble, and was not disappointed. On the morning of the 15th the patient called at my office, his facial expression giving unmistakable evidence of a night spent in great suffering. He stated that at about 12 o'clock of the previous evening he was awakened by a severe pain in his

right ear, which increased so in its intensity as to be almost unbearable. He described the pain as of a throbbing character, being intensified by clearing of the throat, coughing and deglutition. Tenderness was manifested by pressure in the angle between mastoid and ramus of lower jaw, but there was complete absence of spontaneous pain over the mastoid region, nor could any be elicited by pressure. No objective noises. Examination of hearing: Tuning fork showed that bone conduction was better upon affected side. Pölitzer's Hörmesser, R. $\frac{20}{45}$, L. $\frac{15}{45}$. Inspection of auditory canal: R. E. canal filled with a mass of cerumen; L. E. showed same condition as on right side, but not so great. Cerumen was readily removed by very gentle syringing, a very mild degree of force and the use of only a small amount of water being sufficient to float out the masses. After removal of cerumen the hearing distance was as follows: R. E. $\frac{30}{45}$, L. E. $\frac{25}{45}$. The membrane of the right ear now being subjected to examination presented the following evidences of a marked inflammation: The central portion of the membrane, that corresponding to the position of the manubrium, presented the condition of intense injection. The processus brevis and the manubrium were completely obscured by an intense swelling and injection of the membrane, which had the appearance of an inverted cone, the apex corresponding to the umbo, and the base to the area of the foramen of Rivini. The anterior, inferior and posterior segments were almost free from any inflammatory evidence. Without further remark one will readily see that our patient had a well developed and intense inflammation of the middle ear cavity. He responded poorly to treatment, but eventually, after considerable suffering, made a perfect recovery.

Case 3.—Dr. L., consulted me on the 19th of February of this year on account of a severe pain in the right ear. He was constantly annoyed by more or less obstruction to free nasal respiration. On the previous evening the nasal obstruction had given him considerable inconvenience, and in order to relieve the uncomfortable sensation he resorted to the use of an astringent spray. The spraying fluid consisted of a 5-grain solution of tannic acid. A few hours after this treatment he developed a severe pain in his right ear. On examination I found well-marked evidences of an acute inflammation of the middle ear cavity, which rapidly responded to treatment.

In this connection, and as directly bearing upon this subject, I will here offer three or four cases reported by Dr. Ring in the *N. Y. Medical Record* of August 11, 1888. These cases appeared under the title, "Four Cases of Acute Inflammation of the Middle Ear from the Use of Roosa's Bulb Nasal Inhaler." Dr. H. P. Allen, of Columbus, ably criticised the deductions made by Ring, and showed that he had erred in supposing,

the otitis media to be due to the inoffensive bulbs of Roosa. As I wish to show the relationship these cases have to the subject in hand I will give a short synopsis of the treatment adopted previous to the invasion of the otitis media. In Dr. Ring's first case he used a spray of Dobell's, iron and glycerine to the posterior wall of the pharynx, and afterwards inflated, using Pölitzer's bag with Roosa's attachment. In case 2 he sprayed nasal cavities and inflated, as before. In case 3 he sprayed nose, pharynx and throat with Dobell's, and then inflated as in cases 1 and 2. In all three of these cases we have the use of the spray, followed by the inflation of the middle ear by Pölitzer's method. We here report six cases of acute inflammation of the middle ear seemingly due to the use of the nasal spray. It remains for us not only to subject them to careful analysis, but also to ascertain, by direct experimentation, whether a spray under usual pressure is capable of entering the middle ear. It will be necessary, first, to consider the reflex muscular movement excited in the naso-pharynx by the impact of spray; and the minimum of pressure necessary to develop in order to inflate the middle ear cavity.

During the act of spraying, the fluid, more or less irritating, impinges against the posterior wall of the pharynx and, as a result of this irritation, excites the following muscular movement, viz: Very frequently the soft palate contracts immediately; again it remains immobile for a few seconds, or shows only a slight degree of contractility, until there is a tendency of the fluid, which has undergone condensation, to flow into the oral portion of the pharynx, when the palati muscles cause a rapid and vigorous contraction of the soft palate, making a complete separation of the nasal from the oral pharynx. It is hardly necessary to mention that the palati muscles not only exert their action upon the soft palate, but also cause a shortening and dilatation of the mouth of the Eustachian tube. These two factors, the separation of the nasal from the oral portion of the pharynx, and the shortening and dilatation of the tube, are essential elements to the entrance of air or fluid through the Eustachian tube into the middle ear cavity. In inflation of the middle ear by Pölitzer's method these two factors are essential when occurring in conjunction with and simultaneous to the compression of an elastic air bag, the nozzle of which is inserted in one nostril while the other is closed, in order to prevent the outward escape of air.

The maximum of pressure one is capable of producing with a Pölitzer air-bag of a capacity of 300 grams is one-half of an atmosphere, equivalent to a pressure of one-half kilogram. Pölitzer states that with a pressure of 0.1 of an atmosphere air is capable of entering the middle ear cavity.¹ We have now the minimum of pressure one is

capable of evolving from a Pölitzer air-bag, and the minimum of pressure by which air can be forced into the middle ear cavity. The amount of pressure one ordinarily uses in order to produce a spray varies from 10 to 25 pounds, according to the exigencies of the case; a spray of 25 pounds I would consider one of high pressure and very rarely to be used. It is to be distinctly understood that I am here referring to the danger attending the use of the direct pressure spray. It would be difficult to prove that there was sufficient pressure remaining, after loss by resistance and in escape from opposite nostril, to equal the minimum of pressure necessary to cause the entrance of air into the middle ear cavity; yet I hope, by the following simple experiment, to prove that such a pressure exists, if not with unobstructed, at least with partly obstructed nasal passage during the maximum of the spraying act.

In order to obtain the momentum of a sprayed fluid as it passed from the mouth of the atomizing tube it was necessary to construct the following simple device: I first selected an ordinary 8-ounce wide-mouth bottle, into which I placed 3 pounds of mercury. This bottle was stoppered with a vulcanized rubber cork, through which I caused two holes to be bored. Through the larger of the openings I passed a barometer tube, its lower extremity coming almost in contact with the floor of the bottle. Through the other opening I passed a hard rubber tube, bent at right angles; this penetrated 2 centimetres within the calibre of the bottle. Applying cork to mouth of bottle, tubes in position, the apparatus was ready for use.

In order to ascertain if there was any loss in momentum in the spray, due to resistance in the conducting medium, and also where this loss occurred, I instituted the following two sets of experiments:

In the first set of experiments I connected the conducting rubber tube of the air compressor directly to the hard rubber tube of my device. After the above connection had been made I introduced a pressure of 1 atmosphere (1 kl.) in my air compressor. It was now my intention to learn whether the existence of 1 atmosphere of pressure in the air compressor was capable of creating sufficient momentum—the momentum producing sufficient pressure—to raise a column of mercury 76 cm. On turning on the stop-cock, all connections having been made, the mercury rapidly rose in the tube to the height of 76 cm., where it remained stationary, showing that there was sufficient momentum to overcome the atmospheric pressure; or, in other words, the pressure at mouth of tube was as great as in air compressor, there being no appreciable loss in momentum.

In my second series of experiments I interposed between the hard rubber tube and the rubber tub-

¹ "Ohrenheilkunde," Vol. I, p. 1817.

ing of the air compressor an ordinary Snowden atomizing tube, all other conditions remaining the same. In this experiment the mercury rapidly ascended the barometer to the height of 54 cm. We observe here a considerable loss of momentum, due to the resistance created in the atomizing tube. The loss is equivalent to nearly one-third of an atmosphere. Calculating from this the amount of momentum existing with the use of a pressure of $12\frac{1}{2}$ pounds in the air compressor, the pressure ordinarily used, we find that it is sufficient to raise a column of mercury 44 cm. in height, nearly equivalent to two-thirds of an atmosphere—a pressure greater than one is capable of generating from a Pölitzer air-bag. Other conditions being present, we have here produced more than sufficient pressure to cause an inflation of the middle ear cavity. The other conditions are the separation of the oral from the nasal pharynx, the shortening and dilatation of the Eustachian tube, and sufficient obstruction in the opposite nostril to interfere with the egress of sprayed fluid. It would be impossible to prove by dynamics, even with all these conditions existing, that sufficient pressure was generated within the naso-pharynx to cause the penetration of a sprayed fluid within the middle ear. It is hardly to be conceived that there would be any greater loss of pressure, by resistance in the nasal passages, than takes place in the atomizing tube, leaving us, approximately, a pressure of more than one-third of an atmosphere, more than sufficient, according to Pölitzer, to cause an inflation of the middle ear cavity. I submitted my experiment to Dr. E. T. Fristoe, professor of chemistry and natural philosophy in the Columbian University, and he concurred in my conclusions. Although dynamics cannot be of any further assistance, we can gain from the following experimental cases positive testimony in this connection. At this time, as my dynamical experiments lacked a certain amount of positiveness, not enough to quell the doubts of the skeptic, and while looking about for further means of demonstrating these facts, the happy idea occurred to me of making use of living material.

One does not care to toy with his private patients, but the exigencies of the case were such, and a possibility of harm so remote, that I concluded to make such use of them. This idea seized upon me more forcibly as I saw my way clear, in treating these cases, to resort to a little collateral and at the same time harmless observation of the effects that would be produced by special modes of procedure. The cases that I utilized were two of otitis media suppurativa chronica, attended with complete destruction of the membrana tympani, and in which it was necessary to use the spray in treating a co-existing rhinitis. These patients had patulous Eustachian tubes. It was only necessary to slightly vary my

usual course of treatment in order to carry out the experiment I had in view. Previously I had never sprayed the nasal cavity after inflating. It was now my intention, after inflating and thoroughly drying out the middle ear cavity—a cavity minus the outer wall—to again spray the nasal passages and note if there then existed any moisture. On following out this line of investigation in both of my cases I found not only moisture, but the actual existence of several drops of the sprayed fluid in the anterior inferior portion of the tympanic cavity. Again, I introduced a sufficient quantity of powdered boracic acid after drying out both cavities, to fill out the existing remnant of tympanum. I now used the spray in the nasal cavity, and, on examining the ear, found that the boracic acid had become moist throughout.

These two illustrative cases, one with and one without artificial obstruction of the nasal cavity, in conjunction with the actual physical demonstration of the amount of pressure generated by a spray, show in a most conclusive manner that a sprayed fluid is capable, under certain conditions, of penetrating the middle ear cavity through the medium of the Eustachian tube.

Even admitting, though, that there is not sufficient pressure produced to cause the entrance of air into the middle ear, no one will deny the entrance of the sprayed fluid into the mouth of, and a certain distance within, the dilated cartilaginous portion of the Eustachian tube. Immediately after the spraying of the nasal cavities, and before the sprayed fluid has had sufficient time to undergo condensation, the patient resorts to the clearing of the nostrils, more or less violently. The clearing of the nasal passages is always, unless there is a constriction or obstruction of the Eustachian tube, however produced, attended with inflation of the middle ear cavity. This inflation is sufficient, I claim, to drive any spray or fluid, which may have lodged within the lower portion of the tube, into the middle ear cavity. While the condition just mentioned is capable of producing an acute otitis media—the fact of its not being more frequently produced not militating against this occurrence—yet I do not admit that this was the manner in which it occurred in the cases above illustrated, but simply refer to this in order to call attention to a further danger to be thought of in connection with promiscuous and continued spraying of the nasal and naso-pharyngeal cavities. To me there is no doubt that the sprayed fluid entered, directly through the tube, the middle ear cavity in the cases under consideration, and that the irritation produced by the fluid was the cause of the subsequent otitis media.

On many occasions I have had patients state that they had experienced a sensation, during the spraying, in the ear, which caused them to suppose that the fluid had entered the middle ear

cavity, without producing any deleterious effect; and I do not doubt but that other laryngologists can recall similar experiences. Subjecting the first case to analysis, we cannot see what other cause than that of the spraying can be assigned as the producing agent. The pharynx and the naso-pharynx were devoid of all evidences of an acute inflammation, and remained so throughout the history of the case. There was no treatment excepting the spraying of the throat, and we have the positive statement of the patient that she experienced a sensation as though something had entered the middle ear. In the second case we have a recent operation,—twelve days since—the wound being in a healthy condition, nearly healed, showing no evidences of inflammation, considerably removed and not in the line of continuity. No treatment was resorted to after the patient indicated the possibility of the entrance of the sprayed fluid into the ear. The third case is so simple as not to require analysis. The occasional occurrence of inflammatory changes in the middle ear in connection with operations upon the septum narium has given rise to the thought that possibly, in most of these cases in which otitis media acuta or suppurativa occur as a sequelæ, they might owe their origin to the spraying subsequently resorted to, rather than to the operation. There seems to me no plausible reason why an operation from $2\frac{1}{2}$ to 5 cm. anterior to and on the opposite wall of the nasal cavity from the orifice of the tube should give rise to an inflammation extending into the middle ear cavity.

We call attention to these facts not with the intention of decrying the use of the spray—I can not conceive how we can replace this valuable cleansing and curative agent—but simply to call attention to certain dangers which may attend injudicious use of high pressure or indiscriminate employment of this agent. The douche produces, as all know and as first called attention to by Roosa², otitis media suppurativa; but its usefulness is undoubted, and there are cases in which its application becomes an absolute necessity. St. John Roosa's calling attention to this fact has not driven the douche into oblivion—it has only caused a suspension of its indiscriminate use and limitation to its proper sphere of usefulness. Many other valued agents and methods are at times attended with disastrous results; calling attention to these effects only makes one more cautious in their employment. Such is my sole intention in connection with this paper.

Before closing my paper I wish to call attention to another condition which the continued and indiscriminate use of the spray may not only aid in the production of, but possibly in certain cases be the direct producing agent, *i. e.*, otitis media hypertrophica. To me it would be very interesting to follow a number of cases in which the

spray had had liberal use, in order to ascertain whether there was any subsequent impairment of hearing. I shall follow this line of investigation where possible, and hope, by calling attention to it, that others may be stimulated in the same direction. The manner in which the spray could aid in the production of this condition we can readily see—it does not rest upon an empty hypothesis. The difficulty would rest in separating this cause, should it be so, from others acting simultaneously.

DR. MACKENZIE said he believed that fluid may enter the ear in any method of cleansing the nose, and that the danger does not pertain especially to the spray. He narrated a case of double otitis media resulting from the use of intra-nasal spray. His remarks did not apply to the nasal douche.

DR. WRIGHT indorsed Dr. Mackenzie's remarks with the exception that auto-douching *often* gives rise to otitis media, but spraying rarely, and that he has never seen trouble resulting from the use of the post-nasal douche in the hands of the physician, while it should *never* be given to a patient to use himself.

DR. H. H. CURTIS said that in cases of middle ear complication following the use of the nasal douche he had observed that the trouble was usually brought about by allowing the fluid to enter through a free nostril and flow out through one contracted by a stenosis.

DR. MACKENZIE said that all who had much experience in the treatment of nasal disease had met with accidents such as that described by Dr. Richardson. There is no method by means of which fluids are introduced into the nares by which the liquid may not enter the middle ear. The accidents from sprays were, however, of not sufficient frequency to warrant extraordinary care in the method. He related illustrative cases.

DR. C. W. RICHARDSON: I called attention to these few facts as much for the information of the members present as for the purpose of calling to your consideration a few points which I was obliged to omit from my paper on account of limited time. I wish to refer to the indiscriminate manner in which hand ball sprays are so frequently placed in the hands of the laity, and the possible danger resulting from this evil practice.

FAITH-CURING OF CONTAGIOUS DISEASES SUPPRESSED.—The Board of Health of Matteawan, N. Y., having encountered a case of diphtheria that was being neglected by some faith-curing practitioners, declared an immediate quarantine, which was maintained by the police. A reputable physician was put in charge of the case, and the child began to improve.

² Archives of Ophthalmology and Otology, Vol. 1, No. 1.

STAMINA.

Read in the Section of State Medicine, at the Fortieth Annual Meeting of the American Medical Association, June, 1880.

BY A. N. BELL, A.M., M.D.,
OF BROOKLYN, N. Y.

The object of this essay is to reduce the signification of the words "susceptibility," "predisposition" and "heredity."

In the progress of bacteriological knowledge, there is too little attention paid to the organic conditions of health, and the resisting power of the system in conflict with antagonistic forces. Thirty years ago, while engaged in the study of "Living Things," the writer had occasion to observe: "Man's life is inseparably linked with the plants and animals which coexist with him, and these are the issue of long anticipations and preparations, where all the changes produced in other objects occur according to a relation existing among the substances changed. Latitude, elevation, nature of the soil, degree of cultivation, relative position in regard to mountains, forests, rivers, etc., and general aspect of the neighborhood, all modify the condition of man, and prove his adaptability by such effects as serve to make him understand his relations to what is around him. We cannot prevent the dews of heaven, nor the heat of the sun, nor the progress of decomposition; but we can understand the course and order of natural phenomena, we can trace out the laws that govern them and ascertain our relations to them."¹

The reward of man's cosmopolitan nature and free agency is the progress of human welfare, even though won at the cost of impaired health and premature death by those who do the most to promote it. But the influence is reciprocal. Man reacts upon nature no less than nature upon him. Indeed, the changes effected in natural phenomena by human agency are the striking characteristics of conditions promotive of, or in conflict with human health everywhere. This reciprocal action should, above all things else, make the progressive man alive to the importance of constructing and sustaining his ability to contend against the antagonistic forces—both natural and artificial—with which his sphere of life is everywhere intimately associated. And in the application of this knowledge he will learn that health is something more than mere freedom from disease. Health is *opposed* to disease and its causes by the relative integrity, strength and vigor of all the organs and functions of the body, fortified by such conditions as the human organism depends upon for its fabrication and resistance. For example: Two individuals, the one endeavoring to live by rule, and having much to say about the "laws of health," afraid to run

upstairs because it makes the heart beat more rapidly, hurries the respiration and fills the lungs; can't eat cheese because it constipates the bowels, nor cherries for the contrary reason; never drinks water, or but very little, with meals; can't take a glass of milk at bedtime, or a hot roll for breakfast, because such food always sets heavy on the stomach; never eats bacon or pork, and eschews fat meat of all kinds; takes an hour at meals and always leaves off hungry; would not take a cold bath for anything; who prefers the weight of a thick furlined overcoat or cloak to a light one and a brisk walk on a cold day; and sundry other postulates promotive of tenderness. And the other—the reverse: Who is neither afraid to hurry at his meals or to his business; not only runs up stairs, but a long hill, or if in a hurry, forty rods or more after a railroad car; who has taught his stomach, as he has his arms, legs, heart and lungs such lessons in gymnastics as not to be too dainty, and to profit by the variation; who satisfies hunger and thirst; when among Romans, live as they do; finds hog, hominy and hot bread digestible, wholesome and nutritious; has, in short, never tried to live by any rule, except temperance in all things and protection against the extremes of weather. Both of such persons may be equally free from disease, but is it necessary to add that the power of the latter to resist it in every respect—whether it be inhaled, swallowed, inherited, or by exposure to inclement weather—is greatly in favor of the well-nourished and the strong? And the relative immunity depends not upon predisposition, but upon stamina.

With regard to certain infectious diseases to which children are especially liable, in part, doubtless, because of their greater functional activity, but chiefly because their power of resistance has not yet become sufficiently fortified—for it is well known that adults generally who have not encountered those diseases in childhood rarely contract them subsequently—the same relative immunity exists; the strong and vigorous child is much less likely to contract them than the feeble; and the convalescent, those who are particularly feeble from any one of such diseases, are well known to be the most of all liable to attack and to succumb from another. And of pulmonary consumption, the most prevalent and the most fatal of all diseases, who does not know that enfeeblement invites it? That individuals are less and less liable to it—whether traceable to hereditary taint or otherwise—in proportion as coddling has been avoided, appetite for wholesome fat food cultivated, cold bathing habitual, protective but loose clothing worn, and exercise in the open air unrestrained? By the maintenance of these conditions all the processes of healthy organization are promoted and the constitution fortified against tubercle bacilli as in

¹ "Knowledge of Living Things with the Laws of their Existence," by A. N. Bell, A.M., M.D. Bailliere Brothers, New York, 1860.

like manner against other disease germs, no matter whence the quarter or at whatever age of the individual exposed; and no less against diseases not attributable to germs. And the more if we accept Metschnikoff's theory of the office of the *leucocytes* or white blood corpuscles, for these in both number and strength depend upon proper nourishment. "In health," says Kirkes, "the proportion of white to red corpuscles, which, taking an average is about 1 to 500 or 600, varies considerably, even in the course of the same day. The variations appear to depend chiefly on the amount and probably also on the kind of food taken, the number of leucocytes being very considerably increased by a meal, and diminished again on fasting. Also in young persons, during pregnancy, and after great loss of blood, there is a larger proportion of colorless blood corpuscles, which probably shows that they are more rapidly formed under these circumstances. In old age, on the other hand, their proportion is diminished."²

No good observer will fail to recognize the coincidence of the condition which diminishes the proportion of leucocytes and the increased liability to disease—that of fasting; or note the no less remarkable coincidence, the diminution in the number of the leucocytes and increasing infirmity of old age. The leucocyte or colorless blood corpuscle is an *ameba*, the simplest type of a living thing; a jelly-like mass of protoplasm, of the same consistence throughout, which possesses the property of moving about and capturing its prey by changing its form by the protrusion of first one part of its body and then another, and of extemporizing a stomach by wrapping itself around any nutritive particle with which it comes in contact and digesting it. On account of this peculiar property and apparent function of the leucocytes Metschnikoff has conferred upon them the name of *phagocytes*—eaters—as expressive of their most distinctive feature, and of the process in general, *phagocytosis*.

"It has long been known," says Dr. William Osler,³ "that foreign bodies such as ligatures, portions of dead bone and other substances, may be completely removed by leucocytes.

"Nowhere in the body do we have such a facility for studying the action of phagocytes as in the organs of respiration, in which, with the cilia of the bronchial mucosa, they share in the work of cleansing the air-passages; and of these two important agencies it is hard to say which plays the more important part in the expulsion of those particles of foreign matter which, in cities at least, we constantly inhale. There are several groups of cells engaged in this work: The ordinary mucus corpuscles; the alveolar epithelium;

the connective tissue-elements of the pulmonary stroma, and the leucocytes of the lymph tissue in the bronchial, tracheal, mediastinal glands.

"The examination of the morning sputa of a cigarette smoker, or of a person who has been exposed to a dusty atmosphere, shows very clearly that no small proportion of the carbon grains is included within protoplasm. The free granules are abundant, but almost every leucocyte has its little load which it has picked up on its road from the finer tubes to the trachea.

"It is possible to conceive, under certain conditions, of the air cells gradually filling, were it not for the activity of phagocytes, derived largely from the alveolar epithelium, which stands, as it were, at the gateway of the lymphatic circulation.

"In dwellers in the country, as well as in wild animals, breathing an air comparatively pure, the cilia and the phagocytes in the air-passages appear quite able to prevent access of the carbon grains to the lung tissue; whereas in the dwellers in the cities, and in animals kept in confinement, the impurities in the air are so abundant that these agents are insufficient, and sooner or later the grains penetrate the air cells.

"The steps in this process described may be followed in the lungs of any town dweller, but to see in perfection the remarkable activity of the pulmonary phagocytes, one must study the early stages of anthracosis, particularly in those exceptional cases which we see occasionally when a miner has been killed by accident or dies of acute disease. It is not, I think, too much to say that the larger part of the pigment contained in lungs, almost, if not quite, black, is enclosed in protoplasmic cells.

"A physiological process in which phagocytes play a leading rôle, is the removal and disintegration of the red blood corpuscles which have lived their life and are no longer fit for work. The cells containing the red blood-corpuscles, which are found in the bone marrow and in the spleen, however much opinion may differ as to their mode of origin, cannot, I think, be regarded in any other light than as phagocytic elements with this definite function.

"In the mature body we have seen that in the lungs, in the intestines, and in the blood-making organs, the phagocytes have most essential functions; but the question of chief interest to-day relates, not so much to this normal process about which there has never been much doubt, as to the supposed part which these cells take in protecting the body against the invasion of parasites.

"Metschnikoff has studied a number of diseases, erysipelas, anthrax, relapsing fever, and tuberculosis, with a view of finding facts in support of this theory, and his communications within the past four years have been numerous and elaborate.⁴

² Kirke's Hand Book of Physiology, vol. 1, page 79.

³ Address before the Alumni Association of Bellevue Hospital, New York, April 3, 1889.

⁴Published chiefly in Virchow's Archiv.

"In erysipelas the cocci are attacked first by the leucocytes filling the lymph spaces, which rapidly proliferate and actively eat the micro-organisms. Not alone do the colorless corpuscles act as phagocytes, but the fixed connective tissue cells assist in an important manner. In cases of recovery he found that behind the advancing cocci the leucocytes were crowded with parasites, which showed evidences of digestion and destruction. The connective tissue cells do not appear to attack the cocci, but are chiefly concerned with the absorption of the inflammatory exudate, even taking up the leucocytes which have died. In fatal cases there was enormous development of micrococci, the majority of which lay free in the tissues not enclosed in the phagocytes.

"As we might suppose, the views of Metschnikoff have met with sharp criticism in many quarters, and from no one more ably and at greater length than from Baumgarten.⁵ While not denying that the leucocytes eat the bacteria, he claims that the process is by no means universal, and is carried on so unequally, that we can scarcely speak of an active warfare waged against the parasites.

"Metschnikoff states that in malaria the parasites are attacked chiefly in the spleen and the liver by the larger phagocytes existing in these organs, and to a much less extent by the leucocytes in the circulating blood.

"We see then, in malaria very little evidence in the blood favoring a theory of phagocytosis; certainly no such campaigning on the part of the leucocytes as might be expected from the presence, in such numbers, of foes so destructive to the red corpuscles."

Dr. Osler concludes that: "While phagocytosis is a wide-spread and important physiological process throughout the animal kingdom, and while it undoubtedly plays a most important part in many pathological conditions, the question of an active destructive warfare waged by the body cells against the microorganisms of disease must still be considered an open one." (*Medical News*.)

Whatever may be the final verdict with regard to the antagonism of the phagocytes to disease germs generally, it appears to be clear that their proportion and their energy are in direct relation with the vigor of the organism, and dependent upon the same sustaining conditions.

Sir Wm. R. Grove, F.R.S., the distinguished author of "Antagonism," (the subject of a lecture delivered at the Royal Institution of Great Britain, April 20, 1888,) after alluding to Prof. Metschnikoff's theory, says:

"Let us now consider the external life of animals. I will take as an instance, for a reason which you will soon see, the life of a wild rabbit. It is throughout its life, except when asleep (of

which more presently), using exertion, cropping grass, at war with vegetables, etc. If it gets a luxurious pasture it dies of repletion. If it gets too little it dies of inanition. To keep itself healthy it must exert itself for its food; this, and perhaps the avoiding its enemies, gives it exercise and care, brings all its organs into use, and thus it acquires its most perfect form of life. I have witnessed this effect myself, and that is the reason why I choose the rabbit as an example. An estate in Somersetshire, which I once took temporarily, was on the slope of the Mendips Hills. The rabbits on one part of it, viz., that on the hillside, were in perfect condition, not too fat nor too thin, sleek, active and vigorous, and yielding to their antagonists, myself and family, excellent food. Those in the valley, where the pasturage was rich and luxuriant, were all diseased, most of them unfit for human food, and many lying dead on the fields. They had not to struggle for life, their short life was miserable, and their death early; they wanted the sweet uses of adversity—that is, of antagonism.

"The same story may be told of other animals. Carnivora, beasts or birds of prey, live on weaker animals; weaker animals herd together to resist, or, by better chance of warning, to escape beasts of prey; while they, the herbivora, in their turn are destroying vegetable organisms.

"I now come to the most delicate part of my subject, viz., man (I include women of course). Is man exempt from this continual struggle?

"It is needless to say that war is antagonism. Is not peace so also, though in a different form? It is a commonplace remark to say that the idle man is worn out by ennui, *i. e.*, by internal antagonism. Kingsley's "Do-as-you-like" race—who were fed by a substance dropping from trees, who did no work, and who gradually degenerated until they became inferior to apes, and ultimately died out from having nothing to do, nothing to struggle with—is a caricature illustrative of the matter.

"As, with food or exercise, deficiency is as injurious in one as is excess in another direction, so, as affecting the mind of communities, as I have stated it to be with individuals, the effect of a life of ease and too much repose is as much to be avoided as a life of unremitting toil. The Pitcairn Islanders, who managed in some way to adapt their wants to their supply, and to avoid undue increase of population, are said never to have reached old age. In consequence of the uneventful, unexcited lives they led, they died of inaction, not from deficiency of food or shelter, but of excitement. They should have migrated to England! They died as hares do when their ears are stuffed with cotton, *i. e.*, from want of anxiety. We have hope in our suffering, and in the mid-gush of our pleasures something bitter surges up."

⁵ Loc. cit.

"We look before and after,
And pine for what is not;
Our sincerest laughter
With some pain is fraught;
Our sweetest songs are those which tell of
Saddest thought."

(*Nature.*)

With reference to heredity especially (as too commonly understood), in the face of what has been brought forward, while it has undoubted significance with reference to certain constitutional diseases, it is, notwithstanding, amenable to the same organic forces as feebleness of constitution in general; dependent more upon parental feebleness and unhealthy regimen in early life than upon specific tendency. The offspring of poorly nourished, dyspeptic parents, for illustration, are scarcely less liable to pulmonary consumption than the offspring of those affected with that disease; and the offspring of drunkards and of those who use narcotics to excess are well known to be fully as liable to insanity, epilepsy and idiocy as they are to inebriety. Indeed, hereditary feebleness of constitution is the prevailing "predisposition" to disease, and this, associated as it frequently is with inadequate nourishment and neglectful regimen during childhood, accounts in a great degree for the excessive mortality which obtains in infancy.

But in advocating more attention to personal regimen as the chief means of cultivating constitutional stamina and thus increasing the power of resistance to disease, which it is the purpose of this paper to urge, there should be no diversion from the effort to destroy the foci of disease germs and to maintain healthful surroundings. It should always be borne in mind, however, that the ability of the practical sanitarian to successfully cope with infectious disease-germs and their foci, and to maintain his own immunity, is the same as that of other persons: in proportion to the power of resistance, based upon constitutional and cherished stamina.

WHEN SHOULD THE OBSTETRIC FORCEPS BE USED? AND WHAT FORM OF INSTRUMENT IS REQUIRED?

Read in the Section of Obstetrics and Gynecology at the Forthieth Annual Meeting of the American Medical Association, held at Newport, R. I., June, 1889.

BY WILLIAM S. STEWART, A.M., M.D.,

PROFESSOR OF OBSTETRICS AND CLINICAL GYNECOLOGY IN THE MEDICO-CHIRURGICAL COLLEGE PHILADELPHIA, PA.

The question as to when the obstetric forceps should be used follows on the assumption that there are times when they are required. Taking for granted this necessity let us briefly refer to it, enumerating in the first place the circumstances and conditions which do *not* justify the application of the blades.

The forceps should never be used simply to

gratify nervous patients, interfering nurses or meddlesome women, nor to save the time of a practitioner, busy or otherwise. The possibility and comparative ease of applying the blades within the partially dilated os is no indication that even the most careful use in such cases may not result in the rupturing of the cervix and other soft parts, exposing the patient to the immediate dangers from hæmorrhage, septicæmia and the various inflammatory conditions, and as well the possibility of life-long suffering.

The indications for the use of the obstetric forceps may be enumerated as follows:

1. Where speedy delivery is necessary in the interest of either mother or child; as in eclampsia, hæmorrhage, exhaustion, prolapse of the cord, etc.
2. Where the ordinary forces of labor are insufficient to overcome the obstacles to delivery; as in narrowing or partial obstruction of the birth-canal within certain limits, uterine inertia, large foetal head, malpositions, and where the head is engaged in the pelvis and there has been no advance for some time, the "rebound" during the interval between the diminishing pains having ceased.

In addition it is of importance in all cases before applying the forceps to be assured of the existence of the following conditions: 1. That the membranes are ruptured. 2. That there is complete dilatation of the os and retraction of the cervix. 3. Knowledge of the position of the presenting part. 4. Emptiness of the bladder and bowel.

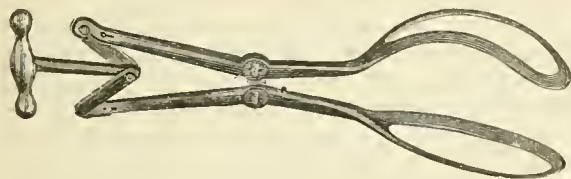
What form of Obstetric forceps should be employed?

The general answer is to use the form best adapted to the case if possible. It must be admitted, however, that each practitioner has acquired by repeated experiences a certain degree of skill in the use of his choice of instrument, notwithstanding its imperfections. But it is not my purpose to refer to the list of instruments which have been more or less in use since the time of Chamberlen's invention, either by condemning one or extolling another, but rather to call your attention to some mathematical principles which should be taken into account in the construction of the obstetric forceps.

It is a trite, but no less true saying that "necessity is often the mother of invention"—with myself it has been the long felt necessity for certain unfulfilled requirements in the obstetric forceps in use that has led to investigations and experiments in this direction. My chief objection to the instruments in use has been the *crossing* of the handles, which, as we are all aware, necessitates the application of the right blade first in order that they may be locked. When the case is one of ordinary position of the head (first position, or left occipito-anterior) there is usually no difficulty in applying the blades in

the regular order ; but it has been my experience, as it has no doubt many times been yours, that when the head is in the second position (right occipito-anterior) or is jammed into the right side of the pelvis, after applying without difficulty the first or right blade of the instrument the introduction of the other was not possible without great risk of injury to mother and child. In every case that I recall, after removing both blades and reversing the order of their introduction no difficulty was encountered till recrossing in order to lock was found impracticable without equally great risks of inflicting injury. An instrument made with the crossed handles reversed would undoubtedly be suitable in these cases, but for ordinary purposes it would not avail.

After much thought and study on this subject, not taking into account the blades, but handles to which any form of blade could be attached, and admitting of the application of either blade first, the instrument which it is my privilege and honor to present for your inspection and consideration is the result. The improvement, as has been said, is in the handles alone, and it is to this that your attention is called.



It was found necessary in constructing such an instrument, in order to avoid the difficulties arising from the crossing of the handles, to do away entirely with this form of handle, and return to the parallel handles improved by the addition of a second joint, and a hand piece so fitted that the necessary traction and compression can be made by a slight effort on the part of the operator.

The force employed is thus a conjoint one effected by means of a double lever, and is everywhere equal in amount to the resistance offered. The amount of traction necessary in the use of this instrument has been found by actual experience both on the manikin and the living subject to be very slight, and the compression just enough to keep the blades from slipping off the head, thus the amount of compression instead of being regulated by the grip of the operator as in the cross-handle instrument, is in every case controlled by the amount of resistance offered, so that in all ordinary cases there is little or no possibility of danger from this source. In certain cases, however, unusual force may be found necessary, and in order to avoid the risk of crushing the foetal head by the increased compression resulting the toggle joint has been constructed so

as to limit the compression to a degree corresponding to that of the average instrument.

As an additional safeguard in malpositions and irregular curvatures of the pelvis, the principle joint is not a fixed one, but allows of slight forward and backward movements of the blades in order that there may be a better adaptation to the head as well as the pelvis ; provision has also been made so that when with other instruments locking would not be possible, these handles may be secured and traction attempted, there being at the same time a slight vertical freedom of the blades to admit of the adjustment to the head becoming more perfect. When the locking can be made absolute from the first this motion does not exist. The advantages then secured in the locking are effected by means of a coned hub with a winged nut attached at the principal joint on the right arm of the instrument.

In twenty-six cases,¹ all of which, undoubtedly, required instrumental delivery, I have used these forceps with results which were indeed surprises, both on account of the facility with which they were applied—either blade first, the slight amount of traction required in all of the cases, and the entire absence of any disfigurement to the children or evidences that in a single instance the compression had been too great.

It is my conviction, gentlemen, that when the obstetric forceps is required the use of this instrument will be attended with fewer risks to the mother, greater safety to the child, and much less difficulty and anxiety to the accoucheur.

RECENT RESEARCHES RELATING TO THE ETIOLOGY OF YELLOW FEVER.

Read at the Meeting of the American Public Health Association in Brooklyn, N. Y., October 23, 1889.

BY GEORGE M. STERNBERG,

MAJOR AND SURGEON U. S. A.

[Abstract for THE JOURNAL.]

The investigation in which I am engaged under instructions from the President of the United States, and in pursuance of authority of an Act of Congress approved March 3, 1887, "making appropriations for sundry civil expenses of the government," is not yet completed. The cultures which I have brought with me from Havana will require further study, and extended comparative researches will be necessary before a definite conclusion can be reached as to the specific etiological relation of one or the other of the micro-organisms which I have obtained from yellow fever cadavers, principally from the intestines.

Owing to the facts mentioned and the limited time at my disposal, I can only give a brief gen-

¹ Since reading the above I have applied the forceps, in all, the thirty-fourth time up to date, with the same degree of satisfaction and success.

eral statement of the present status of the inquiry in which I am engaged and of the methods of research which have been employed. But in my final report a detailed account will be given of the various microorganisms encountered and of the numerous experiments made upon the lower animals.

Having remained in Havana from the middle of March until the first of September of the present year, I have had ample opportunity to obtain all the material necessary for a thorough research by modern culture methods. Thirty autopsies have been made in typical cases of yellow fever, most of which occurred among Spanish soldiers admitted to the military hospital in that city.

My cultures have been made for the most part in flesh-peptone gelatine, and in agar-agar jelly containing five per cent. of glycerine; numerous cultures have also been made in sterilized blood serum, in veal broth, and in *agua coco*. The last mentioned medium I used to some extent during my visit to Havana in 1879, as a member of the Yellow Fever Commission of the National Board of Health. During the past summer I have used it extensively, and find it to be an extremely valuable culture-medium, which is as transparent as water, and yet contains a large amount of nutritive material. It has a specific gravity of 1020 to 1025, a slightly acid reaction, and contains in solution a considerable amount of glucose. Both aerobic and anaerobic cultures have been made in the various media mentioned, into which have been introduced blood obtained from one of the cavities of the heart, material from the interior of the liver, the spleen, and the kidney, urine drawn through the walls of the bladder, and material from the stomach and intestines.

A method which has also been pursued in the entire series of cases consists in the preservation of a piece of liver or kidney, the size of a man's fist, in an antiseptic wrapping, by which the exterior is surely sterilized and the entrance of germs from without is guarded against. Such a piece kept in the laboratory for forty-eight hours as a rule preserved its fresh appearance and had no odor, but upon cutting into it it was found to contain numerous and various microorganisms. The cut surface had a decidedly acid reaction. The microorganisms found under these circumstances were bacilli of various species, and corresponding with those found in the contents of the intestine. They have been isolated by the use of Esmarch tubes and carefully studied. Possibly one or the other of them may be the veritable yellow fever germ, but up to the present time no satisfactory evidence has been obtained that such is the case. The bacilli which have been found most constantly by this method are:

A large, motionless, anaerobic bacillus, resembling in its morphology the bacillus of malignant œdema. This is very commonly present and is

conspicuous by reason of its abundance and dimensions. In my list of microorganisms encountered it is designated by the letter "N."

The *bacterium coli commune* of Escherich, very common.

A motile, non-liquefying bacillus, resembling *bacterium coli commune* in its morphology, but more pathogenic for rabbits and guinea pigs, a facultative anaerobic, very commonly present—my bacillus x.

A short motionless bacillus with stained ends, in chains, resembling the bacillus of Babes, a facultative anaerobic, not pathogenic for rabbits or guinea pigs; found in a limited number of cases only—my bacillus o.

The presence of these various microorganisms in liver obtained at an autopsy made soon after death, and preserved in an antiseptic wrapping, may be taken as evidence that they were present in small numbers at the moment of death, but the examination of "smear-preparations" made immediately after death, and culture experiments made at the same time, show that they are not numerous, and in a considerable proportion of the cases the result of such immediate examination of the fresh liver tissue has been negative.

It is an interesting fact that material from a piece of liver kept as described, and containing the microorganisms referred to, is very pathogenic for guinea pigs when injected subcutaneously in small quantities, 2 to 5 minims, whereas the fresh liver tissue may be injected in considerable amount without producing any noticeable effect. This pathogenic power is due to the microorganisms present, and especially to my bacillus "N" and my bacillus "x." Details of experiments will be given in my final report.

Material from the intestine, also, which contains the same microorganisms is very pathogenic for guinea pigs.

At the close of my address I shall exhibit upon the screen photo-micrographs of the bacilli referred to, and also of the various microorganisms which have been claimed to be the specific germs of yellow fever, viz.:

The micrococcus of Dr. Domingos Freire, of Brazil; his so-called *cryptococcus zanthogenicus*.

The *tetragenus febris flavae* of Dr. Carlos Finlay, of Havana.

The liquefying bacillus of Dr. Paul Gibier—my bacillus "g."

I may say with reference to the micrococcus of Freire that I have not encountered it in any of my cultures from the blood and tissues of yellow fever cadavers, and that my extended observations fail to give the slightest support to his claim.

The yellow fever germ of my friend Dr. Carlos Finlay, of Havana, which I have named *micrococcus tetragenus versitilis*, is one of the most common atmospheric organisms in the city of Ha-

vana. I have frequently obtained it in cultures made from the surface of bodies of patients in the hospitals in that city, and also in Vera Cruz, but it is not present, unless by rare exception, in the blood and tissues of yellow fever patients.

The liquefying bacillus which Dr. Paul Gibier isolated from the intestine in a limited number of cases, I have also obtained from the same source in about one-third of my autopsies, but it is not constant, and when present is not abundant. I see no good reason for supposing that it is the specific infectious agent in the disease under consideration.

THE CLINIC.

ON BLOOD DISEASES.

BY FRANCIS DELAFIELD, M.D.,

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[Reported for THE JOURNAL.]

SIMPLE ANÆMIA.

Case 1.—This girl, gentlemen, says that she is 18 years of age; that four years ago, when she was 14 years old, she began to feel sick. When asked in what way she was sick she replied that she felt tired and weak, and her legs were swollen. She also felt sick at the stomach, and threw up sometimes. Her neighbors told her that she looked white. She improved and was better for two months, and then worse again; then she improved again, and has been going on in this way, from better to worse, and from worse to better, ever since. She says that at present she has no headache and is not sick at the stomach. At one time she spat up some blood. Her feet are but little swollen at present. When asked whether she feels any pain, she places her hand over the left side.

The urine has a specific gravity of 1.015; it contains no albumen; it contains phosphates. The blood has been examined; the hæmoglobin is 20 per cent., the blood cells number 1,714,000 to the cubic millimetre. There is a systolic murmur, heard loudest at the second left intercostal space.

We have, then, a case apparently of simple anæmia, but one differing somewhat from the ordinary examples of this disease; differing from them principally in its long continuance and in the severity of the symptoms. Yet, after all, there is nothing in the history of the case to take it out of the class of simple anæmias.

The girl, as some of you have heard her say, is 18 years old now, and she began to have the same symptoms which she has now four years ago. Those symptoms have continued during a large part of the entire four years. They are observa-

ble in a marked degree at the present time. They have been the ordinary symptoms of simple anæmia in young women. There is the pallor of the face which we should expect to find; there has been headache, disturbance of the stomach, nausea and vomiting, constipation; and there has been disturbance of the menstrual function, consisting in irregularity and scantiness of the flow. There has been the disposition to dropsy, œdema of the legs occurring as far back as four years ago, but not present in any marked degree now. The disposition to bleeding has been present in slight degree. In her case apparently it has not been from the stomach. She has coughed up a little blood from time to time. Whether the blood comes from the throat, the bronchi or the trachea, we do not know; but the disposition to bleeding from the mucous membranes belongs to the disease. We do not know whether she has had any febrile movement. It is very probable she has had, for in marked anæmia there is very apt to be some febrile movement.

When we come to the actual condition of the blood at the present time we find it about as bad as it is likely to be in these cases of simple anæmia. The hæmoglobin is 20 per cent. We sometimes find it down to 18 per cent. in cases of simple anæmia, but 20 per cent. is a very small proportion, and it means a very well marked case of the disease. In the same way with the red blood cells; it is quite possible in milder cases of simple anæmia to have no diminution of the red blood cells, although the quantity of the hæmoglobin is decreased, but the moment we meet the more severe cases we find also a diminution in the number of the red blood cells. In this case the number is diminished in a very marked degree; it is below 2,000,000, instead of being 5,000,000, in the cubic millimetre.

So that we have both an old and a very decided case of anæmia, yet I should have no hesitation in saying that it is one of simple anæmia, although the disease has lasted so long, and the changes in the blood are so marked at the present time. I should not consider it a case of pernicious anæmia. The difference in the prognosis is very great in these two conditions. If this girl has only a simple anæmia she will get well; if she has pernicious anæmia she will not get well. So that the importance of the diagnosis as regards the prognosis of the case is very great indeed. But, as I said, I should have no hesitation whatever in pronouncing her case one of simple anæmia, and in asserting that, if placed under proper conditions, she will get well. I should feel quite certain of it, and I imagine that the only reason why the disease has continued so long is simply the want of proper treatment. The girl has kept about; she has probably consulted a physician from time to time, has been under treatment for a short time, and then, without getting really better, has gone

back to work, and thus the condition has been protracted during all these years.

For this girl to get better, she must have the proper treatment, and she must also live in the proper way. The medicinal treatment is very simple. It consists in the administration of iron in large quantities, usually in the form of Bland's pills, which contain the sulphate of iron. We give these patients of Bland's pills anywhere from six to twenty-four a day. They should receive enough; a small quantity is of no service.

Besides the administration of iron in large quantities you should have the patient inhale oxygen gas ten or fifteen minutes twice a day. In the third place, the bowels must move every day, which may be induced by an enema or some simple laxative. That constitutes the medicinal part of the treatment, and it is exceedingly efficacious. Yet, after all, it is altogether empirical. We do not know why it is that these large quantities of iron are so useful. It evidently cannot be by simply supplying the patient's blood with iron, for we have to give a great deal more than is necessary for this purpose. So of the inhalation of oxygen, I do not think that theoretically very much can be said for it, but practically it is a very important part of the treatment. Then, again, with regard to the constipation—of course anybody is better off for not being constipated, but it makes a greater difference with these patients with anæmia whether they are constipated or not than it does with others. If they remain constipated you do not get the good effects which you ought from iron and oxygen. Thus with regard to these three points in the medicinal treatment, each one of them is empirical; we do not know as well as we would like why the patients improve under them, yet every day's experience shows how much they do.

As to the feeding, I should put this patient upon one solid meal a day, composed of meat and of bread and butter, and during the rest of the twenty-four hours I would feed her on milk alone.

With regard to the mode of life: as this girl is now, I should put her to bed. She is too sick to be up and about. She will improve more rapidly for a time if in bed than if she is allowed to be up. By and by, after the blood had begun to improve, she could begin to get up and go about. Now, all this can probably be done for this girl if she enters a hospital, and that will be the best place for her. It will take, probably, two or three months before she will be well enough to go to work. By the end of two or three months, one can say beforehand with considerable certainty, that the blood will have changed in about this way: Instead of having 20 per cent. of hæmoglobin, it will have about 80 per cent. She will not come up to the normal, but she will have 80 per cent. instead of 20 per cent. Instead of having 1,714,000 red blood cells to the cubic centi-

metre she will have between 4,000,000 and 5,000,000. The blood will have returned to nearly its natural condition; the other symptoms will have disappeared. There will no longer at that time be any disposition to nausea and vomiting. There will be no disposition to bleeding, she will no longer be short of breath, she will feel strong and well, and able to go to work. That is what we can promise in such a case with very great confidence. But this case being an aggravated one, it is necessary that all parts of the treatment should be carried out. It will not be enough to give this girl some iron and let her go to work. She needs rest in bed; she needs diet, besides iron, oxygen, and enemata to relieve constipation.

PERNICIOUS ANÆMIA.

Case 2.—This old gentleman was at our clinic on March 21, 1889, and the diagnosis at that time was, not of simple anæmia, but of pernicious anæmia. The examination of the blood then showed that hæmoglobin was down 15 per cent.—a very small quantity. The red blood cells were down to 1,662,000—after all not very much less than in the girl who has just gone out. Taking the man as he was last March and the girl as we have seen her to-day, and there is not very much difference in the composition of the blood in the two cases. In the man the hæmoglobin was 15 against 20 in the girl, and 1,662,000 red blood cells against 1,704,000. There was no increase in the white blood cells at that time.

He was put upon the use of tincture of chloride of iron and of arsenic. On the 21st of March the treatment was begun, and on the 5th of April the hæmoglobin had got up to 22 per cent. On the 20th of April it was 27 per cent., on the 25th it was 22 per cent., and on the 7th of May it was 28 per cent. On the 13th of May the red blood cells had increased to 2,425,000, and the hæmoglobin had increased up to 40 per cent. Thus you see that there was a very substantial improvement in the condition of the blood under the administration of iron and arsenic, from 15 up to 40 per cent. of hæmoglobin, and from one million odd up to two million odd of red blood cells. During this time the man had no fever, and no hæmorrhages. He felt so much better that he went back to his work, and continued to work until a month ago. Then he came back to the clinic with a return of the same symptoms, but much weaker.

The examination of the blood made to-day, shows that the hæmoglobin is 20 per cent., and that the red blood cells are below 1,000,000, in fact down to 300,000. That is a very small number, indeed. It is not often we get below 1,000,000 to the cubic millimeter. The urine has a specific gravity of 1.015; it contains no albumen and no sugar.

Now, this man presents about the same symptoms as the girl we just saw. The changes in the blood are of about the same kind, only differing in degree. Like her, he has had loss of strength, dyspnoea, and other symptoms, but he has not had a disposition to bleed. Although the clinical history was much the same in the two cases, yet I had no hesitation when I saw this man in March, in saying that he had pernicious anæmia instead of simple anæmia, and there is still less reason for doubting that diagnosis at the present time.

Now these cases of pernicious anæmia are sometimes capable of temporary improvement, but the rule is that the improvement is not only temporary, but it never goes beyond a certain point. The blood does not get anywhere near back to the normal. It gets better, but it does not get anywhere near the normal; and after improving for a time, the condition of the blood begins to grow worse, and the patient's general condition changes for the worse.

The treatment of these patients then is not nearly as satisfactory as the treatment of the cases of simple anæmia. The iron alone seems to do them but little good. The drug that we rely most upon is arsenic; arsenic given in considerable amount during the twenty-four hours. Although the administration of arsenic constitutes the principal part of the medicinal treatment, yet there also seems to be an advantage in adding to it iron, the inhalation of oxygen, and something to relieve constipation if it exist.

Here, again, the treatment is altogether empirical. We know of no very good reason why arsenic should be of benefit to these patients; we know of no very good reason why iron should not be of as much use to these patients as it is to patients with simple anæmia; nor do we know of any very good reason why oxygen should not be of as much use to these patients as in cases of simple anæmia. But a very little experience will show you the practical difference, that the cases of simple anæmia get well under a certain plan of treatment, and that the cases of pernicious anæmia never do anything better than improve somewhat and then get worse again; and each time that they get worse they are worse than they were the time before.

It is very commonly believed that in simple anæmia the change in the blood is due to a diminished formation of red blood cells and a diminished production of hæmoglobin, and that in pernicious anæmia the cause of the change in the blood is increased destruction of the red blood cells. One observer in particular has gone so far as to locate the place of destruction of the red blood cells in pernicious anæmia in the liver. He believes that in that organ there is constantly going on an excessive destruction of the red blood cells, and that that is the reason for the

change seen. All these considerations, however, are so far theoretical; but of one thing we can be certain, and that is the practical difference between a case of simple anæmia and one of pernicious anæmia. But here, again, there are a good many physicians who believe that pernicious anæmia is practically nothing but a bad simple anæmia; that if you have simple anæmia bad enough, you can be said to have pernicious anæmia. This I do not think is true. I think the two conditions are absolutely separate and have nothing to do with each other. At all events, for practical purposes we find that the prognosis and the effects of treatment are altogether different in the two cases. I would advise this man to enter the hospital again.

After the patient had left the room Dr. Delafield continued:

I am very much afraid, however, that when he goes into the hospital this time he will remain there. He has reached the period of his disease now at which we are not likely to get even temporary improvement. With such an excessive diminution in the number of the red blood cells I should not hope for any real improvement at all. The man can be made comfortable, but that is all. I should suppose that he would not be likely to live through the winter. He may be carried off by some intercurrent disease, to which he is more liable than other persons; or he may die, as some patients do, simply in a condition of very great feebleness.

PSEUDO-LEUCÆMIA (?)

Case 3.—This young woman was sent to the clinic as a case of pseudo-leucæmia, or Hodgkin's disease. She says she has been unwell eight months. We observe a tumor near the angle of the inferior maxilla on the left side, which, she says, has been present about two years. It is an enlarged lymphatic in that part of the neck. Some of the other glands in that region are also enlarged, but they do not extend beneath the clavicle. Those on the other side are not enlarged. She says that eight months ago, or in March last, she began to suffer from pains which she describes as commencing in the region of the sacrum and radiating down to the knees, both in front and back. Sometimes a week would pass when she would not have the pains; then they would come on and continue day and night. She vomited at times, and then would lose her appetite; at other times her appetite has been pretty good. She has been troubled with dizziness a good deal, and has been short of breath, but she says she has not coughed and has not spat up blood. There was no swelling of the feet. She remained in bed most of the time from last March until two months ago. She lost flesh, but is now much better than she has been. Her blood has been examined to-day. The percentage of hæm-

oglobin is 65. There is no increase in the number of the white blood cells; the count of the red blood cells has not yet been made. For two weeks she has been taking Fowler's solution, three minims up to seven minims seven times a day.

I doubt whether one would be justified in classifying this case among those of Hodgkin's disease. There seems to be no affection of the glands except those in the neck. This tumor, by the by, ought to be removed. It is very loose and movable; the deeper glands are not large or numerous, and I think there can be no question but it would be wise for her to have it removed as soon as possible. It is quite independent, it seems, of her other troubles. Such glandular enlargements are never good things to have and should always be removed, especially when it can be done as readily as in this case. My assistant had examined the other glands of the body and did not find them enlarged. Two weeks ago he thought he was able to make out some enlargement of the spleen, but he is no longer able to do so.

The history is just one of those which we get now and then, especially from women, in which we find it very difficult to tell how much attention to pay to the symptoms which they lay most stress upon. She had nothing to attract her attention until two years ago, when she noticed an enlargement on the lower part of the face, which went on to increase in size, and is evidently an enlarged gland, due either to simple or tubercular adenitis. She went along with this enlarged gland, but feeling perfectly well, until last March. Then she felt so weak that she went to bed, and she began to have severe attacks of pain which, so far as I can make out from her statement, began in the sacrum. From there they would extend down the thigh, but not following the course of any particular nerve; she felt them, she said, throughout the entire thigh down to the knees. When she had these attacks of pain she also had vomiting and inability to take food. When she did not have the pains she did not have to vomit. Sometimes she would have the pains every day, sometimes she would skip a week, and lately she had not had them for a month or so. The attacks of pain, the weakness, and the disturbance of the stomach seem to have been the prominent symptoms. Two months ago she got a little better, but not much. Then she came here to the dispensary and has been coming seven weeks. She was given arsenic, and during her attendance at the dispensary she has improved a good deal. She now feels a good deal better.

When we look at her the general appearance is not particularly bad. She is flushed, of course, with the excitement of being here, but her color is not bad. She is in moderate flesh; she says she has gained in weight lately. There is nothing

to call attention to the heart, lungs, or any of the viscera. The heart's action is rapid, but there is no murmur.

This is a sort of case which is more common in private practice than it is in cases which we see here. I should be disposed to class it with the patients, especially women, who suffer a great deal, sometimes in one way, sometimes in another, without really having any definite disease of any part of the body. I do not mean to say that the sufferings of these patients are imaginary; they are perfectly real. They are sick; they require treatment; and yet you can not ascribe the sickness to any of the ordinary categories. They are very often somewhat anæmic; they have a diminution in the quantity of hæmoglobin, but yet they are not typical cases of simple anæmia. They do not behave in the same way, by any means. There is a change in the composition of the blood; but, as said, they do not fall into the class of cases of simple anæmia. When they have pains they are very apt to have them as this young woman has had them—in the wrong place; I mean the place that does not belong to any of the regular kinds of pain. Instead of having pain beginning in a particular place and behaving in a way which pains do that belong to diseases we know of, they get up some queer irregular pain, as in this girl. It hurts as much, evidently, yet it is equally evident that it does not belong to the pains which have a real cause. I mean by real cause something like inflammation of a nerve or of bones, or pressure upon a nerve. It is evident from this young woman's description that her pain can not be due to any such cause as that; it is one of the cases of irregular pain.

Of course, to be at all certain about such a case as this you should see it more than once. You should ask a good many questions which I do not care to ask her here. The moral condition comes into play largely; and so far as treatment is concerned, they are cases for management rather than anything else—the moral management, the regulation of the diet and of the mode of life. The particular medicine which you give them is not of so much consequence, so long as it is not opium or bromides (or the different drugs given for nervous troubles). The change in the blood, the anæmia which these patients have, does not, as a rule, respond very readily to the use of iron; it responds much more readily to the mode of life, to diet and exercise. Nor does it respond very well to the use of arsenic. This drug is sometimes of service, sometimes it is not. Since it seems to have been of benefit in this case we will continue it.

MALARIAL POISONING.

Case 4.—The case of this young man is a perfectly straightforward one of malarial poisoning. He works on board one of the steamers which

ply between here and the West Indies, stopping at different points, for a longer or shorter time, where the severer forms of malarial disorders prevail. He was in a hospital at Jamaica, but got better and came out again. His illness dates back seven weeks; during more or less of this time he has had headache, has vomited, has not cared for his food, has felt hot, but has not had chills. His temperature was taken five days ago, when it was 102° F.; to-day it is 98°. His urine has a specific gravity of 1.025; it contains no albumen. On physical examination we find his spleen distinctly enlarged; the liver, on the other hand, is not enlarged. His blood has been examined and found to contain a large number of crescent-shaped pigmented bodies.

The man has acquired not intermittent nor remittent fever, but a form of malarial poisoning which we commonly call malarial cachexia, in which the main change is in the general condition of the patient. Such patients may have a little fever, but it is not a prominent symptom. They lose flesh and strength, and they may have the characteristic changes in the blood.

MEDICAL PROGRESS.

CHRYSAROBIN IN HÆMORRHOIDS.—DR. KOS-
BUDSKI, writing in the *Russkaya Meditsina* on Unna's plan of treating hæmorrhoids with chrysarobin, says that he has employed it—or a modification of it—in twenty-two cases, and has found it on the whole very satisfactory. He does not, however, employ quite such strong preparations as Unna. His plan is to wash the hæmorrhoid with a weak carbolie or creolin lotion, and then to dry it well with cotton wool, after which he applies three or four times a day an ointment consisting of chrysarobin 8 parts, iodoform 3 parts, extract of belladonna 6 parts, and vaseline 150 parts. For internal piles suppositories are employed, which are composed as follows: Chrysarobin, 1 grain; iodoform, $\frac{1}{4}$ grain; extract of belladonna, $\frac{1}{8}$ grain; cacao butter, 30 grains; glycerine sufficient to enable the mass to be made into the form of a suppository. If there is much hæmorrhage a tannin suppository must be used. After three or four days of this treatment the pain and hæmorrhage disappear, and after three months or so the hæmorrhoids are found to have almost completely shrivelled up.—*Lancet*.

PARATYPHLITIC ABSCESS.—DR. J. F. JENKINS, of Tecumseh, Mich., at a meeting of the Michigan State Medical Society, related a case of paratyphlitic abscess. Paul P., æt. 10 years, had an attack of paratyphlitis in December, 1886, following catarrhal pneumonia. In fact, before

he began to convalesce from the pneumonic trouble, the symptoms of paratyphlitis began to manifest themselves. He was at that time confined to the bed about three weeks with the disease, which eventually terminated in resolution.

The patient enjoyed good health until June 2, 1888, when Dr. Jenkins was again called to see him. He complained of pain in the right iliac region, and in that locality pressure elicited a great deal of tenderness. The bowels were constipated, and during the course of the disease there was more or less tympanites. There was occasionally a slight degree of nausea, but he seldom or never vomited. Disuria was troublesome at various periods of his illness, and during the same period priapism was occasionally observed. The right thigh was flexed upon the body during the course of the disease. This was a marked condition in the first attack. He frequently complained of pain extending from the hip to the knee. The pain in the bowels was never severe, and only required a limited amount of anodynes to control it. The temperature ranged from 100° F. to 103° F. He seldom or never complained of being chilly. During his illness his appetite was moderate and he slept tolerably well.

July 19, nearly seven weeks from the date when his illness commenced, the patient was placed under chloroform by Dr. L. G. North. Dr. Jenkins brought the right limb, which had been flexed, into a straight position, which revealed an elongated tumor in the iliac fossa about the size of a walnut; and by the use of the hypodermic syringe, demonstrated the fact that the tumor contained pus. He made an incision into the tumor, and nearly eight ounces of very offensive pus was evacuated from it. A moderate sized drainage tube was introduced and extended to the bottom of the cavity of the abscess. It may be well to mention here that this cavity was never rendered aseptic. The patient henceforth rapidly recovered, notwithstanding the weather at that season of the year was extremely warm. This boy only a short time since passed through his third attack of paratyphlitis, and the formation of the second abscess, the symptoms being similar to the previous attacks already mentioned.

His illness commenced on April 1, of this year, and a week from that date, he was again placed under the influence of chloroform by Dr. North, and an incision made into the abscess, and the contents evacuated. Dr. Jenkins then introduced his finger into the cavity in order to determine whether there was anything that he could detect, which produced the abscess, but with a negative result. It was afterwards carefully washed out with carbolized water, and a drainage tube inserted deep enough to reach the bottom of the cavity. During several days afterwards it was

syringed out with carbolized water, and ten days after evacuating the abscess the wound healed and the patient was able to sit up.

The abscesses above described and operated upon, were extra-peritoneal. The first abscess was not operated upon until nearly seven weeks had elapsed from the commencement of the attack of paratyphlitis; from the fact that the parents would not consent to an earlier operation. The principal factor in producing this Fabian policy in their minds, and in Dr. Jenkin's, was that the first attack of the disease terminated in resolution, after an illness of three weeks. The second abscess was opened on the seventh day from the commencement of the attack, and the patient made a rapid recovery.

The great difficulty is to diagnose between an extra- and an intra-peritoneal abscess. In either case it is an all important factor to determine when to operate. The history of the case, the condition of the patient, the use of the hypodermic syringe, or the aspirator, will go far in determining the necessity of an operation which, in many cases, if performed sufficiently early, will in all probability save the life of the patient, or on the other hand, by prolonging the date of an operation may jeopardize his life.

DISINFECTION OF THE BIRTH-CANAL.—In order to secure complete disinfection of the vagina and cervix, DÖDERLEIN and GÜNTHER have made many experiments. The employment of simple mechanical measures, such as scouring with the finger and irrigation with sterilized water, has proved inadequate. The finger anointed with vaseline to enable it to reach the various vaginal folds, has given no better results. Irrigation with solutions of sublimate and carbolic acid have only produced incomplete disinfection, while they have the disadvantage of leaving the mucous membrane dry and harsh. Contrary to Steffek (who does not like creoline), the writers have obtained their best results with creoline. Their method is to anoint the finger with a lubricant mixed with creoline, and then rub and scour carefully the mucous membrane of the genital passages with it. This is followed by copious injections of a 2 per cent. solution of creoline. After this operation the mucous membrane remains soft and supple, while the vagina has always been found to be free from all germs.—Maygrier, *Rev. des Sc. Méd.*

TREATMENT OF SYPHILIS BY SUBCUTANEOUS INJECTIONS OF MERCURIAL PREPARATIONS.—H. LELOIR and M. A. TAVERNIER have administered, during the last two years, 1573 injections in the treatment of syphilis. The cases were treated as follows: Eight hundred and seventy-five with calomel in suspension in vaseline oil (1 to 12); 642 with the yellow oxide suspended

in oil of vaseline (1 to 12); 56 with gray oil according to Neisser's formula (vaseline oil 40, ethereal tincture of benzoin 5, purified mercury 20).

The injections of calomel and the yellow oxide (half a Pravaz syringeful) were repeated every eight days, the needle being thrust deeply in the muscles of the fossa behind the trochanters; the injection of the gray oil (one-third of a syringeful) was given every nine days in the buttocks. The punctures were covered with mercurial plaster. These injections are especially useful in cases of erythematous eruptions or the eruptions of resolving syphilomata on the integument; they possess the sole merit of acting rapidly, not to say harshly. Their action upon mucous surfaces is almost *nil*. They are more apt to be followed by recidives than are inunctions, and are less certain than the latter in their effects. They should not be used in non-resolving syphilomata in cerebro-spinal and visceral syphilis, or in cases of pregnant women or in children. They are especially applicable in the treatment of prostitutes, while in ordinary private practice their use is attended with serious inconveniences.—*Gazette Méd. de Liège*.

HYDRASTIS IN MEMBRANOUS DYSMENORRHOEA.—DR. FRANZ JORDÁN relates in a Hungarian medical journal an interesting case of most obstinate membranous dysmenorrhœa, in which after many years had been spent in trying all manner of different methods of treatment, hydrastis canadensis rapidly effected a cure. Dr. Jordán employed the liquid extract of hydrastis canadensis, twenty-five drops of which he ordered twice a day. This very soon began to produce an appreciable effect, and after a short time the medicine was required only at the time of menstruation or for a few days previously, the loss of blood becoming very light, and the pain disappearing altogether.—*Lancet*.

DISINFECTION OF SICK ROOMS.—According to KELDYCH (*Journal de Méd.*, Sept. 22, 1889), an adequate disinfection of rooms may be secured by saturating the air with eucalyptol, a disinfectant that is not dangerous to inhale, and that has no injurious effect upon furniture. Keldych has shown that an examination of the air of clinical lecture rooms, when thus treated, proves it to be free from bacteria which can be cultivated upon gelatine. Moved cultures can still be produced, but the action of these upon the higher animals, though not well understood, appears to be harmless.

PRECOCIOUS MENSTRUATION.—DR. A. J. JAGOE, of Hernando, reports the case of a child four years of age who has been menstruating for two years. The child, a negro, was exhibited at the local Medical Society and found to be healthy; its breasts are well developed and the pubes covered with hair.—*Memphis Med. Monthly*.

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SATURDAY, NOVEMBER 30, 1889.

A NEGLECTED PHASE OF ENURESIS NOCTURNA.

So much is continually appearing in medical journals on the subject of enuresis nocturna, and so many remedies are being recommended as wholly reliable and efficacious in its treatment, that it would appear almost superfluous for us to refer to it. And yet, if we examine all this literature, we will see that it has a very one-sided

bromides or other sedatives; so that, in consideration of the prejudicial manner in which this subject is generally treated, it seems that there is still room for discussion directing our attention more in the channel of a judicious inquiry into its causation and pathology, which naturally calls for a clear perception of the anatomy and physiology of the parts.

First with regard to the mature type, as presented by the adult male.

The detrusor and sphincter muscles of the vesical system are innervated from two sources: The detrusors, those contained within the bladder walls, are supplied from the sympathetic system, and are, therefore, involuntary; the sphincters, two in number, of which the external is formed by the compressor urethræ (A, fig. 1), the internal by the ring of muscle making up the base of the prostate (B, fig. 1), are supplied from two sources: the external one is supplied entirely from the spinal cord, and is, therefore, entirely voluntary; but the internal or prostatic sphincter, while possessing some voluntary fibres, is composed mainly of involuntary muscle. As a result of this the process of collection and voidance of urine is carried out in this way:¹ We will imagine fig. 1 to represent an empty bladder.

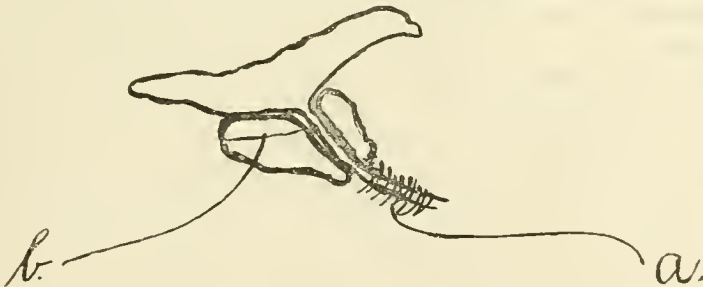


FIGURE 1.



FIGURE 2.

aspect; that (except in cases arising from reflex irritation or organic lesions, whose treatment is indicated by the discovery of such a cause—a class which we do not propose to consider here) nearly all of the remedies advised are used either empirically, or their use is based on the idea that the origin is invariably, as Trousseau declared, a neurosis, an excessive irritability, or exaggerated tonic of the muscular fibres of the bladder, subservient to a hypersensitive condition of the mucous membrane of the organ; and the little sufferers are accordingly dosed in progressively increasing quantities with belladonna, atropia,

Both sphincters are then closed and the point of separation between the bladder cavity and the urethra is clearly defined. But as urine accumulates in the bladder, it gradually lifts up and distends the vesical walls until the amount of distension reaches a certain degree, when the urine pressure becomes sufficient to divulse, to a slight extent, the urethral opening, allowing some of the urine to trickle into this prostatic portion, soon distending it also. It is then that the desire to urinate is first felt. But if it is not convenient for the person to answer the call at that time, his

¹ "Gonorrhœa der Sexualorgane," Finger, 1888.

will acts on the sphincter—the external one more especially—which remains contracted until such time as he is willing to pass his water. Then the bladder is in a condition about like Fig. 2, and the cavities of the prostate and bladder are merged into one. When the person does wish to pass his water, the external sphincter and that part of the prostatic muscle located at its apex relax their vigil and open up a passage for the urine.

That all this is true may be proved in various ways, the simplest being to introduce a catheter when the bladder contains only a small amount of urine, mark the length of the catheter within the urethra just when the first drops of urine appear, then wait till the bladder is quite full and repeat the experiment, when it will be found that fully three-quarters of an inch less of tubing will be required now to “strike water” than was necessary in the first experiment, showing the shortening of the urethra in consequence of the encroachment of the bladder cavity on it. So that the power of voluntarily holding a bladderful of urine depends not so much on the strength of this internal sphincter as it does on the strength and amount of control which the person has over the external one. But, on the other hand, that the external needs the support and reënforcement of the internal or prostatic sphincter, is proved by the very affection under discussion.

In early infancy the retentive function is almost *nil*, and incontinence is therefore natural, physiological. Later, in childhood, the boy is educated up to and practices control over his sphincter, the external voluntary one, the only one as yet in working order, which he manages very well during the day, when urination is frequent and calls are promptly met; but at night, when his will-power is banished in the land of dreams, the urine surprises the slumbering sphincter, steals past it and escapes into the bed. But with the development, towards puberty, of the prostatic tissue and the accession of involuntary sphincter action, such incontinence, whether nocturnal or diurnal, ceases; the involuntary comes to the assistance of the voluntary, bears its share of the burden, and the infantile annoyance becomes a nonentity. Should it persist after this epoch, we must attribute it to a continued weakness or lack of development on the part of one or both of the sphincters.

But it may be contended that this is not necessarily so—that the hyperexcitability first referred to will explain this phenomena equally as well. What do we know about “hyperexcitability” or irritability of the bladder? That wherever there *is* such a condition, it manifests its presence in unmistakable terms. There is frequency of urination, by day as well as by night, with pain that admits of no dallying when the call to urinate is felt. What man with an inflamed or irritable bladder-neck dares to disregard the signal of accumulated urine?

On the other hand, do we hear the little subjects of nocturnal incontinence make any complaints of this sort? If we listen attentively to his or his mother’s description of the trouble, we will probably soon disabuse ourselves of pre-formed ideas of excitability, etc. The complaint is simply of an *inability to hold water*. There is no pain, no urgent desire to urinate, other than that produced by the remembrance that unless he take the proper care, the consequences of parental wrath will follow the soiling of his clothes.

To be sure, we must admit that there are some cases for which irritability, in consequence of hyperacidity of the urine, or some such transient condition, must be held accountable, but such cases are as short-lived as their causes, and are not to be classed with those under discussion.

Concluding, then, that enfeeblement of the retentive powers is the *raison d’être* of the malady, our object should naturally be to combat this defect. The administration of strychnia, rhus aromatica, ergot, etc., probably has a certain value in this respect; but the remedy, reliable above all others, and the one that has done much to substantiate the views just presented, is that of electricity, applied not by placing one pole on the perineum and the other on the abdomen, in the vague hope that, guided by a kind Providence, the current may pass through the enfeebled muscles; but it should be conducted *through* them by means of an insulated electrode introduced into the urethra after the manner commonly employed in treating strictures with electrolysis. GUYON, the originator of this method, directs that each séance be not longer than two or three minutes in duration, and not too frequent. Only the sphincters are to be galvanized. The female urethra, surrounded as it is by sphincter muscle throughout its extent, is treated by passing the

electrode slowly back and forth from meatus to vesical neck.

Successes with this method, in both male and female patients, have been obtained and reported by GUYON,² JAMIN³ and others, whose names we do not now recall, and success in each case was forcibly emphasized by previous records of repeated failures with other established and approved plans.

We do not wish to be understood as advocating this as an invariably appropriate treatment for infantile incontinence, but our object is simply to express a belief that it is too little used in many cases in which close questioning and a definite diagnosis would point to it as the only rational method.

THE TOPICAL TREATMENT OF DIPHTHERIA.

There is a widespread and seemingly well grounded belief in the primarily local nature of diphtheria. If the belief be true, local treatment is demanded, and that at the earliest possible moment. And although the question of the local nature is one of great importance, the practitioner ought not to permit his own skepticism to master his method of treatment. Much of the danger inherent in the disease lies in the possible extension of the diphtheritic process into the lower respiratory passages. If, therefore, there is a method of topical treatment which will arrest the development of membrane and prevent its extension without doing injury to the patient, that remedy should be employed in every case. The doubt which exists in the minds of some practitioners as to the possibility of attaining this end, and the diversity of opinion among others as to how the end may be attained are, in one sense, unfortunate; but they have no doubt had the effect of stimulating investigation.

Almost every remedy and every conceivable combination of remedies has had its advocates. Lunar caustic, one of the earliest applications, is now seldom employed, except at the commencement of the disease when the membrane is yet very limited in extent. MORELL MACKENZIE pronounces caustics dangerous and astringents harmful, and prefers as a topical application a solution of chloral hydrate. Corrosive sublimate, the best of all parasitocides, should, *a priori*, be the best agent for local application, and it has of

late been used by many with much success, but it must obviously be used with due caution.

In the *American Journal of the Medical Sciences* for November, MULHALL, of St. Louis, proposes washing out the throat with about a cupful of an antiseptic solution by means of an ordinary household syringe at intervals not exceeding three hours in length. A diluted mixture of carbolic acid and compound solution of iodine is recommended as best suited to the purpose. The author asserts that the method of treatment may be practiced with impunity even on very young children; but we should fear for the result in less skilful hands.

DETHIL's treatment with turpentine, tar and resin should not be lost sight of, for we have combined in it both local and systemical treatment of the patient, and disinfection to some extent of the apartment or the entire dwelling. A more agreeable if not more efficient mode of procedure is that of J. LEWIS SMITH, who recommends the constant ebullition of a mixture of eucalyptus oil and turpentine in the proportion of 2 drachms to 8 ozs. in a quart of water. SCHMIEDLER has more recently practiced the local application of pure turpentine.

We have repeatedly seen permanent arrestation of all throat symptoms follow the thorough application of the solution of subsulphate of iron (Monsel's solution), as practiced by WHITTAKER, of Cincinnati, and reported by him in 1881, after its successful use in a series of nineteen cases. The method consists in passing a brush or pledget of cotton saturated with the solution up into the post-palatine space, permitting the spontaneous muscular contraction which follows to express the medicament, thus causing an inundation of the entire mucous membrane. The application is attended with no danger of injuring the mucous surfaces and is followed by no more serious consequences than retching and sometimes vomiting. In this application we have probably the combined action of an astringent and a parasiticide. As an astringent, its use is indicated to retard the growth of membrane and to prevent the absorption of ptomaines. As a parasiticide, it is directed against the supposed cause of the disease. Whittaker is quoted as having recently reiterated to the Academy of Medicine his confidence in the method. Favorable reports have appeared from other sources also, rendering it highly proper that the remedy should receive a thorough trial.

² "Leçons Cliniques sur les Mal. des Voies Urinaires," p. 211.
³ Journ. de Med. de Paris, No. 15, 1889.

EDITORIAL NOTES.

HOME.

HYGIENE AND PHYSICAL CULTURE AT GETTYSBURG.—The parents of the late Dr. Charles H. Graff have donated the sum of \$25,000 to the Pennsylvania Hospital, Gettysburg, for the purpose of endowing a professorship of hygiene and physical culture in that institution.

SOUTHERN GYNECOLOGICAL ASSOCIATION.—The Southern Surgical and Gynecological Association closed its annual session in Nashville, Tenn., on the 14th inst. The next meeting will be held in Atlanta, Ga. Dr. George J. Engelmann, of St. Louis, was elected president; Dr. B. E. Hadra, of Galveston, Texas, first vice-president; Dr. Duncan Eve, of Nashville, Tenn., second vice-president; Dr. W. E. B. Davis, of Birmingham, Ala., secretary, and Dr. Hardin P. Cochrane, of Birmingham, Ala., treasurer.

THE CENTRAL TEXAS MEDICAL ASSOCIATION will meet in Waco, Tuesday, January 14, 1890, for which meeting the following programme has been appointed: "Cerebro-Spinal Meningitis," by Dr. J. C. J. King; "Pneumonia," by Dr. C. T. Young; "Hæmorrhoids," by Dr. J. E. Brown; "Cystitis," by Dr. W. C. Blalock; "Diseases Incident to Dentition," by Dr. J. M. Witt.

NORTH TEXAS MEDICAL ASSOCIATION.—The next meeting of this Association will be held in Gainesville, Texas, beginning on Tuesday, December 10, 1889, and continue for three days. The meeting will be called to order promptly at 7:30 o'clock P.M. The arrival of the trains late in the afternoon occasions the selection of this hour, in order that valuable time may not be lost. The following programme has been issued:

Section on Practice of Medicine.—"Exophthalmic Goitre," by Dr. T. M. Taylor, Sherman; "Valvular Lesions of the Heart," by Dr. M. C. McBride, Lebanon; "Acute Articular Rhenmatism," by Dr. J. D. Bedford, Honey Grove.

Section on Obstetrics and Gynecology.—"Puerperal Fever," by Dr. O. H. Caldwell, Dodds; "Diagnosis and Treatment of Pelvic Cellulitis," by Dr. J. E. Gilcreest, Gainesville; "The Most Desirable Position for a Woman in Labor," by Dr. Alonzo Sims, McKinney.

Section on Surgery.—"Traumatic Cataract," by Dr. R. H. Chilton, Dallas; "The Indications in the Surgery of the Larynx and Trachea," by

Dr. E. W. Rush, Paris; "Surgical Cases, Including Two Cases of Laparotomy," by Dr. J. M. Inge, Denton.

Volunteer Papers by Request.—"A New Artificial Drum Membrane," by Dr. H. N. Spencer, St. Louis; "Herpes Progenitalis," by Dr. G. Frank Lydston, Chicago, Ill.; "Extirpation of the Ileo-Cæcal Junction," by Dr. J. F. Hooks, Paris; "Cerebro-Spinal Meningitis," by Dr. S. D. Moore, Van Alstyne.

FOREIGN.

DR. G. GRANVILLE BANTOCK has been elected an Honorary Fellow of the American Association of Obstetricians and Gynaecologists.

FIRST AID IN THE ITALIAN ARMY.—The Italian Minister of War has requested the medical department to draw up a programme of instruction in the elements of medicine and surgery suitable for use in military schools. It is intended that all cadets and non-commissioned officers shall make themselves competent to give first aid in cases of accident and other sudden emergencies.

THE AMERICAN HOSPITAL AT TEHERAN.—The United States Minister to the court of the Shah, recently laid the corner stone of an American hospital at Teheran. The funds for its erection have been raised partly in the United States and partly in Persia. Dr. W. W. Torrence, of Teheran, was the originator of the movement.

THE SCIENTIFIC GRANTS OF THE BRITISH MEDICAL ASSOCIATION.—We learn from its official organ that Dr. Sidney Martin has, on the recommendation of the Scientific Grants Committee, been reappointed by the Association one of its research scholars for one year. The following additional grants have been made by the Council in accordance with the recommendation of the Scientific Grants Committee: Mr. Haukin £50 to continue his investigations into the nature of an albumose that has been obtained from anthrax cultures under certain conditions; Dr. R. Kirk £10 for a research on alcaptonuria and on the distinction between albumen and mucin in the urine, and some other points in connection with proteids in that fluid; Dr. J. R. Bradford £15 for some experiments on the action of the cortex cerebri on the vaso-motor system; Dr. H. H. Ashdown £10 for a continued research upon absorption from the bladder.

TOPICS OF THE WEEK.

THE ANATOMY OF THE FUTURE.

Some years ago an elderly professor of anatomy expressed his thankfulness that in the branch he taught there was no harassing progress. Physiology and chemistry, he said, were undergoing changes from one day to another, but anatomy was always anatomy, a bone was always a bone, and there was no wearisome struggle to keep up with the rushing progress of the times. And such is the view of anatomy entertained by many of the profession. Not a few of us think, when we look back over a number of years spent in active practice, that we started on our journey with much more baggage than was necessary in the way of memorized anatomical truths; that we could have done with a smaller quantity, but that that smaller quantity should have been better selected. We question whether the anatomy taught in our colleges to-day is the anatomy of the future. Is it not rather a result of the labor of successive generations of book-writers, each showing more eagerness to add new facts to the mass than to examine into and verify the old ones?

The anatomy of the future will not resemble that taught now. The scope of the subject requires enlarging, and for the narrowing memory work done to-day a broad view of the whole must be substituted. In other words, the student should first acquire a knowledge of general and comparative anatomy, and subsequently study its application to the human body. To begin work with the descriptive anatomy of man is working backward. Such a course has been likened to the study of an ultimate twig of a tree by a person who is ignorant of the character of the larger branches, of the trunk, and of the soil on which the tree grew.

Embryology urgently demands attention as a necessary introduction to the study of the parts of the body and as a subject the knowledge of which is of direct practical advantage in daily professional life. Observe how important has become the anatomy of the embryo in connection with the study of disease. The disposition of the layers of the embryo must be clearly understood to enable one to understand the structures of the body and the diseases developing in those structures. Studies such as these lighten the student's task. Take, for instance, the arrangement of the great vessels in the root of the neck. The disposition of these structures is learned commonly by the study of a scheme or diagram, perhaps by the friendly aid of a cunningly devised "tip." The relations of these vessels could, by the study of development, be so impressed upon the student's mind as never to be forgotten. Can any of our readers forget what a bugbear the peritoneum was? Can you put your hands on your hearts and say that you thoroughly understand all about it now? And yet, when the peritoneum is studied from its early and simple state there will be no longer any difficulty either in comprehending or remembering the arrangement of its folds.

The very great advance made of late years in the study of nervous diseases renders a change in anatomical teach-

ing very necessary. In our day the anatomy of the arteries was paramount, and the nervous system occupied a position of secondary importance. Yet the nerves, their cutaneous distribution, their communications with central ganglia and with one another, are matters of daily, almost hourly, consideration in the round of a doctor's visits, while of the arteries, over which we spent such time and such labor, there is rarely occasion to think. The practitioner is constantly meeting with nervous manifestations the correct interpretation of which renders a clear knowledge of nerve distribution necessary, while it is possible for him to practice for the whole course of his natural existence without ever being called upon to tie an artery. Should such a demand be made, he will seize the bleeding point in the wound, secure it, save his patient, and then go home to study the vascular system afterward. The statement has been made, we think by the late Dr. Fothergill, that the chances of an ordinary practitioner being called upon to tie the subclavian are almost equal to those of his meeting his death by lightning stroke.

To render the study of anatomy attractive and at the same time thoroughly useful, a complete change in our present system is called for, and teachers will soon have to consider the importance of comparative anatomy and of embryology as introductory studies, and the necessity of putting the nervous system in its proper place as the most important department of the human body, and not waste their energies in teaching the relations of arteries with which the student is unlikely ever to have anything to do.—Editorial—*N. Y. Med. Jour.*

THE PULSE IN DISEASE.

While the clinician is accustomed to feel the pulse of his patient in order to add to his knowledge concerning the case before him, we think that he rarely does so because he expects to gain more than a general idea of the state of the circulatory apparatus, and with no attempt on his part to go deeper and determine the causes which produce the changes which he is so apt to note in his daily life.

We have already called attention in an earlier number of the Magazine to the stimulating influence which heat exercises in moderate amount upon the heart and its nervous ganglia, and have shown how the rapid pulse of fever is due to a stimulation of the cardiac accelerator nerves. We are accustomed to regard a rapid pulse as a concomitant of fever and to do no more, forgetting how the sudden fall of a high temperature may be followed by a cardiac failure, not due, as some have supposed, to exhaustion, but to the withdrawal of the accustomed stimulation. From the studies of Bruntton and others, we may have seen this fundamental fact concerning the pulse proved by the most positive experimentation.

The causes of collapse in the course of an acute disease such as scarlet fever, for example, are not so largely due to general exhaustion as we suppose. It is a matter of common-stock knowledge that excessive stimulation of any portion of the body means exhaustion. In a fever the high-bounding pulse of the early stages denotes not only an increased action of the heart, but also an in-

crease in the blood-pressure, from the excitement of the vaso-motor centre in the medulla. Under these circumstances the high fever suddenly drops, producing collapse, or, the fever continuing, a palsy ensues from excessive action. Such a result does not evidence nervous failure, but circulatory break down. Similarly the soft, compressible pulse of the person whose muscles are relaxed and flabby, evidences general lack of tone.

We have the several causes of rapid pulse. Fever, by its heat, exhaustion of the vagus, imperfect cardiac action, by which the tissues are strained and call for more blood, and finally relaxation of the blood-paths, whereby the resistance to the heart is decreased, and the heart rushes on unhindered and pumping into a huge expanse of blood-vessels.

The causes of the slowing of the pulse are equally numerous. The diminution of pulse-rate by cold so seldom influence the heart in daily life as to be an unknown factor, but the vagal irritation and high arterial pressure are constantly at work, and it is often the part of the physician to relieve the spasm of the blood-vessels rather than to give stimulants to support the heart. By remembering facts such as these, we are often able to treat diseased states with not only a better appreciation of the requirements of the patient, but also with a clear understanding of the reasons for each and every change of treatment.—*University Med. Magazine.*

THE SPECULUM IN ANCIENT SURGERY.

DR. ALI COHEN, of Gröningen, describes, in the *Nederland Tidschrift van Geneeskunde*, a remarkable passage in the Talmudic treatise called the Niddah. The physician is there instructed, when it is uncertain whether hæmorrhage proceeds from the vagina or the uterus, to introduce a "siphopheroth" into which a "mechul" is introduced bearing "mouch." When the "mouch" is found, on retraction, to be covered with blood, that shows, according to the Niddah, that the hæmorrhage is uterine. It is expressly stated that the apparatus does not wound the patient in any way. The "siphopheroth" was a cone of lead; its orifice was bent inwards, so as not to wound the vagina. The term is manifestly corrupted from the Greek. The "mechul" was a long wooden rod, and "mouch" signifies a preparation very like charpie. Thus the mechul and mouch were the equivalents of the speculum forceps and wool. The siphopheroth was not the strict homologue of the speculum, but rather a contrivance meant to guard against a source of fallacy respecting the seat of hæmorrhage in pelvic disease. It is not stated that the instrument was designed for direct inspection of the cervix. Facts of this kind, unearthed by Dr. Cohen, are of considerable interest. They show that the sound scientific methods and ideas which prevailed in the old civilization of the Mediterranean basin were not confined to the Egyptians, Chaldees, and Græco Roman nationalities, but also certainly flourished in Judea. Historians are fond of tracing the arrest of true scientific research, so marked in the Middle Ages, to the blending of Græco-Roman and Semitic ideas, so favorable to humanity in other respects. That very blending brought about more than one enlightened and

philanthropic religious system. Logically, it should have aided science. But science remained in abeyance till the Renaissance. The fault probably lay not in Christian and Jewish systems of civilization, but in the intellect of the Teutonic and Latin nations, which was insufficiently developed during the Middle ages to appreciate science.—*Brit. Med. Journal.*

THE GRAPHIC ARTS IN MEDICINE.

On Friday, November 1st, a meeting was held in the large theater of the medical school of St. George's Hospital, with Sir Prescott Hewett in the chair, to inaugurate a society for the encouragement of the pictorial and allied arts amongst past and present students of the hospital. In opening the meeting the Chairman expressed his opinion of the extreme value of drawing and painting to the medical man, not only for the actual results produced, but also, if seriously followed, on account of the value of the training. He then related how his pre-medical career had been passed in a French studio, and how the training had developed his accuracy of sight, and of what great importance this had been to him in his surgical work. Referring to photography, he mentioned that its importance was becoming daily more and more recognized, both in clinical and museum work, and reminded his hearers that modern photography owed its recent great progress to the enthusiasm of amateurs. Dr. Dickinson formally moved: "That a society be formed in connection with St. George's Hospital for the purpose of encouraging sketching, painting, engraving, modeling, carving, photography, and the arts of representation in general." One of the ways in which it was proposed to attain this end was to hold a meeting of the society at least once a year, at which members should exhibit any of their productions that could be included under the above headings. The meeting closed, after the election of officers and council, with a very cordial vote of thanks to Sir Prescott Hewett for taking the chair, and the society is fortunate to have secured him as its first President. Past students of St. George's who may be desirous of joining the society are requested to send their names to Dr. Penrose, the Honorary Secretary, at the hospital.—*British Medical Journal.*

VIRCHOW AND THE DARWINIAN THEORY.

According to the Vienna correspondent of the *British Medical Journal*, in Professor Virchow's presidential address at the recent meeting of the Anthropological Congress, the Darwinian theory was referred to, and he said that the intermediate link that should bring man and the ape into connection—the proper "prosanthropos"—had been sought for in vain. It was impossible even to determine the descent of single races from others; and it could be asserted that among the ancient races there was none that stood in any nearer relationship to the ape than ourselves. There was no tribe of people in the world that we were unacquainted with; and not one of the known tribes could justly be considered ape-like, appearances common to apes—such as prominences of the skull—being insufficient evidence of relationship. There was evidence that in the course of 5,000 years no remarkable changes of type had taken place. This adds to the evidence of the impossibility of the chasm between the highest type of anthropoid ape and the lowest type of man.—*New York Medical Journal.*

PRACTICAL NOTES.

BACTERIA IN WATER.

Water may appear clear, yet swarm with bacteria, nor does freezing much lessen the danger of water, since many bacteria are unaffected by freezing. Ice sometimes contains the bacteria of typhoid fever, indeed it may be nothing short of a congealed emulsion of bacteria with which we can inoculate ourselves. The protection of water from pollution by sewage is a problem which concerns everybody. Absolute safety can only be obtained by the use of ice artificially frozen.—Dr. C. G. Jackson.

THE TREATMENT OF ECZEMA.

DR. UNNA, of Hamburg, publishes in the *Monat. für Derm.*, a paper on the Diagnosis, Etiology, and Treatment of Eczema. He says that even before the experimental cultivation of bacilli exact clinical observation had distinguished a number of entirely different types of eczema, and he thinks that each different type will be found to require a different mode of treatment. The type most frequently seen in Hamburg is seborrhœic eczema, and the parasite causing it is the same which in the first instant produces pityriasis capitis. Those persons who suffer from seborrhœic eczema of the head, including those affected with pityriasis capitis, are apt to suffer from the same kind of eczema on other parts of the skin. Dr. Unna has repeatedly pointed out that we possess a series of valuable remedies for the treatment of seborrhœic eczema in all its forms—viz., sulphur, resorcin, chrysarobin, and pyrogallol. Of these remedies resorcin is the best, as being the least likely to produce local or general ill effects. It may also be used in an alcoholic or watery solution, or in the form of ointment, paste, soap or powder. Dr. Unna's favorite formula is a solution of three drachms of finely-powdered resorcin with an equal quantity of glycerine in 6 ounces of spirits of wine, diluted with four times the quantity of water or chamomile tea. A thin layer of cotton wool well moistened with the solution is applied, covered with some waterproof material, and fastened by a bandage. These applications are particularly useful when the treatment is prolonged, or when it is carried out by night. They are, of course, impossible in general eczema of adults, but not in that of infants. Dr. Unna describes an especially important effect following the application of resorcin, viz., a swelling of the epidermis, by which all painful fissures are healed in a single night. In order to insure healing, he advises that the skin should be anointed after the removal of the bandage, and that washing with soap should be avoided. A few people suffer from a resorcin idiosyncrasy; this is, however, very rare, as he

has only met with it ten times in five years' observation, during which time he has seen 2,000 cases. He remarks that his treatment is not adapted to those cases of long-existing eczema in which strongly infiltrated or thickly-indurated patches occur.—*Lancet*.

IODOFORM GAUZE IN POST-PARTUM HÆMORRHAGE.

DR. O. PIERING, assistant in Prof. Schauta's obstetric clinic in Prague, has published his experience in the employment of Dührssen's plan of plugging the uterus with iodoform gauze for post-partum hæmorrhage due to an atonic condition of the organ. Dührssen recommends that, when post-partum hæmorrhage comes on, the bladder should be emptied, and forcible friction and intra-uterine irrigation of hot or cold water, along with ergotin hypodermic injections employed; that if the hæmorrhage still continues, the cavity of the uterus should be filled with iodoform gauze, the irritation produced by this setting up active and permanent contraction. The method has, according to Dührssen, the advantages of great certainty, complete harmlessness, and facility in its performance. Olshausen, Veit, and Tehling, however, say that the contraction set up is not always permanent, and that the method is not so free from danger as Dührssen believes. In consequence of these conflicting views, Dr. Piering resolved to give the method a trial, and he details several cases in which he employed it with complete success. In no case was any harm done by it. He advises that resort to the plug should not be too long delayed, and he prophesies an important future for the plug of iodoform gauze in post-partum hæmorrhage.—*Lancet*.

COOLING OF THE BODY BY SPRAY.

DR. S. PLACZEK, following up some laboratory experiments by Preyer and Flashaar, on the effect of spraying a considerable part of the body surface of animals with cold water, has applied the spray for the purpose of reducing febrile temperatures in human beings. In the case of a man suffering from phthisis, whose temperature was high, he found that by spraying about a pint of water at between 60° and 70° F. over his body the temperature fell to normal, and continued so for several hours. Again, a similar method was satisfactorily applied in the case of a girl with diphtheria. In the healthy human subject the spray lowered the temperature nearly 2°, and in animals which had been put into a condition of septic pyrexia by injections of bacteria the temperature was reduced to normal by the spray. By keeping healthy guinea-pigs and rabbits some hours under spray and using from half a pint to a pint of water at the temperature of the room—44° to 62°—the temperature of the animals fell several degrees.—*Lancet*.

SOCIETY PROCEEDINGS.

The American Academy of Medicine.

Thirteenth Annual Meeting, held at the Leland Hotel, Chicago, on Wednesday and Thursday, November 13 and 14, 1889.

DR. LEARTUS CONNOR, OF DETROIT, IN THE CHAIR.

The officers for the year 1888-9 were the following:

President—Dr. Leartus Connor, Detroit, Mich. Vice-Presidents—Drs. Peter D. Keyser, Philadelphia, Pa.; L. Duncan Bulkley, New York, N. Y.; Theophilus Parvin, Philadelphia, Pa.; George J. Fisher, Sing Sing, N. Y. Secretary and Treasurer—Dr. Richard J. Dunglison, Philadelphia, Pa. Assistant Secretary—Dr. Chas. McIntire, Jr., Easton, Pa. Council—Drs. Traill Green, Easton, Pa.; Lewis H. Steiner, Baltimore, Md.; Henry O. Marcy, Boston, Mass.; Benjamin Lee, Philadelphia, Pa.; Albert L. Gihon, U. S. Navy; R. S. Sutton, Pittsburgh, Pa.; Lewis P. Bush, Wilmington, Del.; Frederic H. Gerrish, Portland, Me.; Leartus Connor, Detroit, Mich.; Peter D. Keyser, Philadelphia, Pa.; L. Duncan Bulkley, New York, N. Y.; Theophilus Parvin, Philadelphia, Pa.; George J. Fisher, Sing Sing, N. Y.; Richard J. Dunglison, Philadelphia, Pa.; Charles McIntire, Jr., Easton, Pa.; Hosmer A. Johnson, Chicago, Ill.; Gershom H. Hill, Independence, Ia.; Justin E. Emerson, Detroit, Mich.

FIRST DAY.

After the reading of the minutes of the last annual meeting, and a verbal report of the Council, the Academy proceeded to elect a large number of Fellows, each applicant for admission having been endorsed by a Fellow of the Academy.

THE PRESIDENT appointed the following Committee on Nominations: Drs. Traill Green, G. H. Hill, and Alonzo Garcelon.

The following Reports were read from standing committees: Report of Committee on the Requirements for Preliminary Education in the various Medical Colleges of the United States and Canada. By Dr. J. E. Emerson, Chairman.

Report on Laws Regulating the Practice of Medicine. By Dr. Richard J. Dunglison, Secretary of the Academy.

This comprehensive report was chiefly the outcome of an extensive correspondence with gentlemen in the various States and Territories of the United States and in Canada who were directly interested in the subject, officially or otherwise, and whose names had been suggested to him by the distinguished Secretary of the Illinois State Board of Health. It gave, therefore, a very accurate and interesting view of the working of such laws in the regions indicated. It alluded to

the action of the Committee on Uniform Medical Legislation in the United States; of the American Medical Association at its late meeting at Newport; to the recent legislation in New York State, by which a certain standard of preliminary education was required of all medical students; and to the detailed operations of the law in about twenty of the States of this country.

In Kentucky, the law was generally observed, as it is in North Carolina. In Florida the law has the great defect of requiring every applicant to produce a diploma from a recognized medical college, and all those previously in practice one from a medical college *recognized by the American Medical Association*; but the latter has no relation to medical colleges, its membership being made up from medical societies only. The Virginia law is effectively carried out by the State Board of Medical Examiners, but the work of the Board has not caused the colleges to turn out any better graduates. The law is operative in Indiana; Maine is without any law, the one passed last year having been vetoed by the Governor; and the effect of the law is salutary in Missouri. The practical effect of the law has not been satisfactory to the State Board until recently the latter was strengthened by a decision of the Supreme Court.

In South Carolina the law has been slightly amended to increase its efficiency. In Wisconsin there is really no law which restricts the right to practice, although only graduates in medicine or those connected with organized medical societies can testify in court or collect fees by law. The law is efficient in Minnesota, and it is found that the applicants improve in general ability, intelligence and knowledge of medicine with each session of the Board. The law in that State is considered a great protection to the community, and has been strengthened by decisions of the courts. Texas is making strong efforts to secure a good law. The Tennessee law is not perfect, but is a decided improvement on the nothing which existed before it was passed. There is a good law in Maryland, based on the Illinois Act, but it is not practically enforced. The West Virginia law is working well, and that of Alabama is regarded by the profession in that State as "almost ideally perfect." In Arkansas there are numerous County Boards, but these, being appointed by County Judges, are often totally incapacitated for the duty.

In regard to the registration law in force in Pennsylvania, a correspondent expresses the view that it is the worst one of all, as the system of protection is applied for the benefit of the medical colleges, these being made the executors of the law, the Faculty of one medical college being made the absolute judge, without appeal, of the qualifications of the graduates of a competing medical college. He thinks unrestricted freedom is better for the public and the profession than an unfair law unjustly administered.

Reports were made from the following special committees :

Committee on Papers for Annual Meeting, Dr. N. S. Davis, Jr., Chairman.

Committee on Eligible Fellows, Dr. S. J. Jones, Chairman.

Committee on Publication of Transactions, Dr. A. L. Gihon, Chairman.

Committee on Preparation of a Catalogue of the Fellows, Dr. R. J. Dunglison, Secretary of the Academy.

Committee on Amendments to the Constitution, Dr. B. Lee, Chairman.

The following papers were then read :

The Institutes of Medicine; the Necessity of their being Taught in our Schools, by Dr. Cheston Morris, Philadelphia.

Gymnastic Medicine, by Dr. F. Hitchcock, Jr., Ithaca, N. Y. This paper was an interesting sketch of the influence of gymnastic treatment of disease, in place of that of mere drugs, and the writer's experience as Professor in Cornell University was cited in advocacy of the sound practical views entertained by him on the subject.

The Academy then adjourned until 3 o'clock P.M., when, Dr. Traill Green, being called to the Chair, the PRESIDENT, DR. CONNOR, delivered his Address on

THE AMERICAN ACADEMY OF MEDICINE, ITS SIGNS OF PROMISE AND OBSTACLES, ITS FIELD OF LABOR, AND SOME SUGGESTIONS LOOKING TO AN INCREASE OF ITS EFFICIENCY.

The paper is one that commends itself to every friend of liberal education and deserves what it will doubtless obtain—the general attention of the medical profession. Dr. Connor alluded to the fact that this was the first meeting of the Academy in the West. The idea that the Academy was founded upon a new idea born of an aristocratic modern notion was combated, the facts being that Hippocrates urged that the preliminary training of medical men be made as broad and deep as possible, while by precept and example the same idea has been maintained by all the famous medical men from Hippocrates to Alonzo Clark. The effects of such changes as are desired by the Academy are shown by what was accomplished by the Harvard Medical School when in 1870 it raised its standard of preliminary requirements; previous to this time the medical students were inferior to those of the other departments—now they are indistinguishable. It is objected by some that broad education does not pay. To this it is replied that the pure tradesman has no place in the temple of medicine; that the highest honors and emoluments during all time have come to the physicians who have sought to uplift the profession. The Academy is pleased to observe that

the effort made by the College of Physicians and Surgeons in New York and by other colleges to advance the requirements of preliminary education have yielded most satisfactory results; that a recent enactment by the State of New York shows that the principles advocated by the Academy have been adopted by a great commonwealth; that the enemies of the Illinois State Board of Health have failed to accomplish its ruin; that most encouraging results have been obtained by the efforts of the Minnesota State Board of Examiners, as evidenced by a recent enactment of the Minnesota Legislature; that similar progress has been made in Montana, Virginia and North Carolina; that earnest efforts in the direction of educational advancement are being made by the American Medical Association and by pharmaceutical societies.

Among the obstacles opposed to the adoption of the Academy's designs there is one indicated by the fact that the proportion of literary college students to the entire population has notably decreased. The medical colleges themselves oppose efforts to advance medical education. The professors of medical colleges are often inefficiently educated and hence do not encourage liberality of education in their pupils. The lukewarmness of many members of the Academy is opposed to the effective prosecution of its work. The greatest of all the obstacles to be encountered lies in the extensive general ignorance in the profession itself.

This part of the paper bristled with important and even startling facts illustrated by the citation of many important statistical figures. Among these may be noted the fact that among 9,306 medical students only 811 were possessed of literary degrees, of which number one-third emanated from institutions not recognized by this Academy.

Contrasted with veterinary colleges the comparison remains greatly in favor of the latter. The number of A.B's. in the medical profession is diminishing. On the other hand, the proportion of A.B's. in the various schools of medical practice presents a pleasanter picture, there being 94 per cent. among regulars and 6 per cent. among the various classes of irregular practitioners.

After a survey of the field of useful activity presented to the Academy, with various recommendations of plans for adoption, the paper closed with the necrological reports for the year. The recommendations were referred to the Council, with the thanks of the Academy for his able address.

The following papers were then read and referred to the Council :

The Need and Position and Object of the American Academy of Medicine, by Dr. Traill Green, of Easton, Pa., was read by title.

DR. S. J. JONES of Chicago, then read a paper entitled

WHAT IS THE PROPER FUNCTION OF AMERICAN MEDICAL COLLEGES OF THE PRESENT TIME?

He gave a very entertaining sketch of the history of medicine, and particularly medical education, in this country from the earliest times. In Europe, he said, the requirements and attainments of medical men vary from time to time in the various countries. In this country our political characteristics are such as to acquire certain peculiar features in our medical institutions. For thirteen years the Academy has labored to increase the standard of preliminary education. It also aims to assist the student in the progress of his educational studies. The apprentice system in medicine, as well as its "office student" outgrowth, has been abandoned. The student does best to begin his medical education at the college doors, without seeking to prepare for his course by office reading with a so-called preceptor. Since the Academy first began its labors many changes have been inaugurated by the medical schools in order to suit themselves and the requirements and spirit of the times. The more advanced portion of the medical course is the one which has manifested the most improvement. The writer believes that the function of medical schools should be restricted to teaching, leaving the matter of examining and licensing to the various States, because of the variations in the requirements of medical practice in the different sections of the country. The mixed Board of Health, as seen in Illinois, has accomplished much good work.

There is nothing new in the idea of separating teaching from licensing in this country, for such a separation was seen even in the last century; while in New York, in 1839, the State Medical Society resolved that such separation was advisable. The question is asked, "Is such a separation practicable?" There were formerly objections to such a procedure, but these objections are no longer valid. The National Government does not assume the right to do this, but the power is conceded to the several States.

In the early record of American medical history it is interesting to observe that Drs. Rush and Drake were both bound out at a very early age as medical apprentices. This apprentice system ended at about 1810. The history of American medical colleges was traced from the foundation of the first in 1750 down to the present day.

The trouble with our modern colleges is that their facilities are too few and their numbers too great. It would be unfair to restrain a college from teaching because its facilities were not of the best, and yet at the same time a college diploma is an uncertain quantity and often very deceptive. As matters now are, in most States the authorities are obliged to treat all diplomas as though they knew them to be of a high order of value.

DR. HENRY M. LYMAN, of Chicago, then addressed the meeting on the subject of

INSTRUCTION BY RECITATION.

He said that during the past eighteen years he had experimented in the methods of instructing medical students in the several departments of chemistry, physiology, nervous and mental diseases, and the practice of medicine. As the result of his experience, he believed it desirable to have recitation assignments of lessons made. Regarding the difficulties in the way of the practical application of this method of instruction, he found that the range of usefulness of this method is not so wide as in literary colleges. The topics best adapted to this form of instruction are the elementary branches, anatomy, physiology, chemistry and materia medica. Recitations should be combined with all necessary didactic exhibitions. In the advanced branches the conditions are different; here the student can still get the theories from the books, but it is his desire to learn the views of his various teachers. Recitation, however, may still be used to some extent even in the advanced branches. Tutors and tutorships should be established so that classes may be made small.

There are several difficulties in the way of the recitative method; first, there is the lack of suitable text-books. Some are too long, some too short, some not well balanced. There is a splendid field for writers in supplying this deficiency in medical literature. The second difficulty is to get well-qualified men to teach by this method. It is not easy to obtain tutors who are willing to work on the necessarily small salaries which have to be paid. It is not uncommon for students to request lectures instead of recitations, but at the end of a fair trial of the recitative method the students are generally well satisfied. One of the disadvantages in lecturing to large classes is that it is a very difficult matter to fix the attention of the students, who are apt to be distracted by the least break in the continuity of a lecture.

DR. J. C. MORRIS, of Philadelphia, said that the plan advocated by Dr. Lyman had been in operation in Philadelphia ever since he could remember—for the quiz classes are recitative classes. By this method he, as a quiz master, had taught chemistry, materia medica, physiology, and the practice of medicine. The better students all attended these classes, the method of teaching being something like that employed by the *privat docenten* of Germany and the tutors of Edinburgh. He said that the apprentice system in medicine gave way to the preceptor system, in which the teacher is expected to give instruction by the method of recitation. Teaching of this kind is highly necessary as a means of eliminating from the student's mind errors obtained from a failure to properly comprehend lectures, and as a means

also of increasing his information. In his experience as quiz master the examinations were more rigid than the general examinations, and very few students who were recommended by the quiz masters failed in their examinations. He would go farther than Dr. Lyman, and apply the method to all the branches of medical instruction.

DR. S. J. JONES said that the only difference concerned the method employed. The question is whether this form of instruction shall be imparted by the college itself or whether the matter be collateral and voluntary on the part of the student. As regards the year of preliminary instruction under a preceptor, it may be said to be of little avail to the student, who will generally accomplish quite as much by beginning his education at the college doors. The practical driller in college is as valuable as the Professor himself.

DR. P. J. FARNWORTH, of Clinton, Iowa, said that American students were adapted to this method of instruction. As lectures are arranged there is no time left for the students to read. The recitation method is in accord with the genius of our general plan of education.

DR. G. H. HILL, of Independence, Iowa, said that recitations would not be so necessary if students were A. B.'s. There are few students who know how to take notes.

DR. H. A. JOHNSON, of Chicago, said that the teacher comes too little into personal contact with the pupil. The recitation method is very helpful. In his teaching he has always made this his endeavor. Class quizzing is only useful when the attention of all is held. It is easier for the medical teacher to cram for a lecturer and talk for an hour than to hold recitations, for in this he has the floor and the students cannot talk back.

DR. LESTER CURTIS, of Chicago, described the most interesting lecture he ever heard. It was a kind of clinical quiz in which the patient's history was read, after which the pupil was given time for examining the case and prepare for his quiz, the teacher's function being mainly to keep him on the track. The interest manifested on the part of the class was almost dramatic in its intensity. Didactics have largely been abandoned on the continent.

DR. E. WING, of Chicago, found the theory of Colleges wrong, the fact being that students are not equipped with mental discipline. The quiz master and demonstrator knows best the student's condition and needs. Didactics are largely failures. In New York the lecture-rooms are deserted for the quiz-room.

DR. J. N. HYDE, of Chicago, found that the average medical student is taught according to better methods in this country than abroad. He found fault with the literary colleges for making a good literary education a luxury for the wealthy, whereby the medical student is largely debarred from a good foundation for his medical studies. This was not the case some years ago.

DR. A. GARCELON, of Lewiston, Maine, dwell on the importance of preliminary examinations. As for the recitation method of instruction this was in vogue where he began his medical studies fifty-three years ago.

DR. J. H. RAUCH, of Springfield, Ill., read a paper on

THE WORK OF THE ILLINOIS ARMY MEDICAL EXAMINING BOARD.

He said the Board was granted large discretionary powers and received the cordial coöperation of Gov. Yates. The Board's examinations were stringent ones, but they often found that men without diplomas were better qualified than men provided with them. The paper excited many interesting reminiscences.

DR. GREEN, of Easton, Pa., recited similar experiences to those of Dr. Rauch in his own Army experience. In examining homœopathists he generally found it useful to quiz on *materia medica*.

DR. S. J. JONES related some amusing experiences connected with his duties as examiner for the Navy.

DR. H. A. JOHNSON said that during his experience as an Army Examiner it often happened that his own pupils appeared for examination, when he sometimes found to his surprise that they had forgotten the points upon which he had placed most emphasis as a teacher. He explained this on the hypothesis that these were points of information that the practitioner had found little use for, and accordingly he was led to modify the character of his instruction. The late Dr. Flint had told him the longer he lived the fewer things he taught, but these things he made hooks upon which to hang important facts. The Army field was the best school of medicine ever afforded to the physicians of this country. It was a constant clinic.

SECOND DAY.

The Academy reconvened on Thursday morning at 10 o'clock.

DR. RAUCH, on invitation of the President, made some remarks on *The Advance of the Standard of the Medical Degree, as shown by the Statistics of the Illinois State Board of Health*.

The election of Fellows was then resumed, and nearly 100 in all, who had been approved by the Council, were elected.

The Secretary reported the action of the Council upon the report presented by the Committee on Amendments to the Constitution. Several of these amendments were reported negatively by the Council, in accordance with such report, and the following amendments, approved by the Council, were adopted by the Academy:

Paragraph 1, Section II, Article III, to read as follows: "The degree of Bachelor of Arts or of Master of Arts, after a systematic course of

study, preparatory and collegiate; but when a candidate has not received either of these degrees in course, other evidence of a preparatory liberal education which shall be considered as equivalent to the same by the Council (hereinafter to be provided for), may be accepted in lieu of a degree by the Academy."

Paragraph 3, Section II, Article III, to read as follows: "When a candidate is an alumnus of a foreign institution or institutions not granting the degree of Bachelor of Arts or Master of Arts, or of Doctor of Medicine, a certificate or certificates, or a license, which shall be considered as equivalent by the Council, may be accepted in lieu thereof by the Academy."

Article X, to read as follows: "A Latin certificate of fellowship, bearing the seal of the Academy and the signatures of the officers, shall be issued to any Fellow, on payment of its cost."

In consequence of the adverse report of Council, the other amendments were laid upon the table.

At the recommendation of Council, the following gentlemen were elected Honorary Members: Dr. David Jordan, President of the Illinois State University, Bloomington, and Sir James A. Grant, M.D., of Ottawa, Canada.

Several other gentlemen were elected Fellows of the Academy, having become eligible by reason of the adoption of the first-mentioned Amendment.

On motion, the recommendation of Council that the Academy should hold its next annual meeting November 12 and 13, 1890, in Philadelphia, was adopted.

The Committee on Publication of Transactions was continued, with approval of Council, under the same instructions as those given them at last annual meeting.

The President's Address was referred to the same committee.

On recommendation of Council, the other Special Committees were continued, the appointment of gentlemen composing them to be made by the incoming President.

The Treasurer's report was presented, and referred to a Committee of Audit, Drs. Hill, Heath and Garcelon, who subsequently reported the account as correct.

The Committee on Nominations reported that they recommended the following officers for the ensuing year: President, Dr. Samuel J. Jones, of Chicago, Ill.; Vice-Presidents, Drs. Justin E. Emerson, Detroit, Mich., Edward Hitchcock, Jr., Cornell University, Ithica, N. Y., J. Chester Morris, Philadelphia, Pa., Alonzo Garcelon, Lewiston, Me.; Secretary and Treasurer, Dr. Richard J. Dnnnglison, Philadelphia, Pa.; Assistant Secretary, Dr. Chas. McIntire, Jr., Easton, Pa.

After the election of additional Fellows, the reading of papers was resumed.

Dr. Gershom H. Hill, of Independence, Iowa,

read a paper on *The Moral Treatment of the Insane*, which was referred to the Council.

Dr. F. C. Heath, U. S. Marine-Hospital Service, read a paper on *Medical Harmony*, and Dr. N. S. Davis, Jr., one on *The Physiological Action of the Typhoid Fever Poison*, both of which were referred to the Council.

Other papers, the authors of which were not in attendance, were read by title, and referred to the Council: *The Need and Position and Object of the American Academy of Medicine*, by Dr. Traill Green, Easton, Pa.; *Aim and Scope of the American Academy of Medicine*, by Dr. Edward Jackson; *The Mission of the Academy*, by Dr. R. Lowry Sibbet, Carlisle, Pa.; *Brief Sketch of the late William Elmer*, late a Vice-President of the Academy, with appended resolution, by Dr. Lewis P. Bush, Wilmington, Del.

The following preamble and resolution, offered by Dr. Traill Green, were adopted:

The report of the good work accomplished by the Illinois State Board of Health having gone beyond this State throughout the United States, and received with approval, the American Academy of Medicine, in session in Chicago, congratulate the citizens of Illinois and the profession on the good which the Board has wrought by their action in securing an advance of preparation of those who minister to the people in their sickness.

Therefore resolved, That we approve the labors of the Board, whose action has been read by so many of our members in distant parts of our land; that the Fellows of this Academy testify to the influence of the Illinois State Board in advancing a better preliminary education for intending medical students, and a more extended course in the medical schools; and that they present to the Board their thanks for the help which the profession has received from their action, and wish for them continued success in their work and the support of their fellow citizens.

Dr. Jordan, President of the Illinois State University, then, by invitation, addressed the Academy on the changes that had taken place in the under-graduate courses.

The newly-elected President, Dr. S. J. Jones, was then inducted in the chair by Drs. Traill Green and H. A. Johnson, appointed by the President.

Thanks were tendered to the retiring President, Dr. Connor, for the able and faithful discharge of his duties; also to the proprietor of the Leland Hotel for courtesies extended.

The time of appointment of committees by the new President was, on motion, extended to be at the convenience of the latter.

The President appointed Drs. H. A. Johnson and G. H. Hill additional members of the Council for the ensuing year, and Drs. Emerson, Heath and McIntire the Committee on Eligible Fellows.

The Academy then adjourned.

THE grand duke Nicholas of Russia, who is suffering from cancer, has undergone a surgical operation for the introduction of a cannula into the throat.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Academy of Medicine—A Plea for the Practical Utilization of Hydro-therapy.

At the last regular meeting of the Academy of Medicine Dr. S. Baruch, who has for a number of years devoted much attention to the subject, read a paper entitled, "A Plea for the Practical Utilization of Hydro-therapy." He stated that this plea would be based upon historical, physiological and clinical grounds, and that it was his purpose to divorce the remedial use of water from its empirical union with hydropathy by urging its simplified employment by the general practitioner in his everyday rounds.

Having referred to the vast literature that had now accumulated on the subject, he gave a historical sketch of hydro-therapeutics from the time of Hippocrates, and then quoted from the writings of such modern clinical teachers as Niemeyer, Ziemssen, Dujardin-Beaumetz, Peter, F. A. Hoffmann and Semmola. The opinions of the most judicious, philosophical and successful physicians of past ages he went on to say, had been sustained by the judgment of the world's most enlightened era, and hydro-therapy had maintained its position not simply on clinical grounds, but was to-day more firmly established than ever, because it was based upon well-ascertained and exact physiological facts, the application of which formed the most brilliant chapters of clinical medicine. The works of Winternitz, Naumann, Chapman, Delmas, Bottey, Liebermeister and others teemed with experiments on animals and man, which must prove to the unbiased observer that by means of the thermic and mechanical effects of water prompt and decided modification may be impressed on all the functions of the body.

Having dwelt for some time on the physiological effects produced by water, as recorded by various observers, he quoted as follows from Dr. M. P. Jacobi: "Sleepiness during the pack nearly always occurs in successful cases, and we have found the greatest amount of benefit to accrue when the patient was able to sleep for half an hour after the completion of the pack and massage. If, during the first period of the pack, we may assume, for reasons already stated, that blood circulates in increased volume and under increased pressure through the nerve centres, and that, in consequence, the acid fatigue products, which had been maintaining a permanent excitement of nerve elements, could be completely removed, the immediately subsequent diminution of blood supply effected during the second part of the pack cannot fail to be a great advantage, for it lowers the functional activity of the nerve cen-

tres, that had been unduly prolonged, and brings them, therefore, into the condition which is a necessary preliminary to the beginning of nutritive assimilation. The diminution of the blood supply is not sufficient to interfere with this latter process, for it is not below the point which exists in sleep, the physiological period for nutritive assimilation in nervo-muscular tissues. Accepting Ranke's law for these tissues, that they are only nourished when fatigued, *i. e.*, relaxed, we may see, further, in the muscular relaxation induced by the warm moisture of the pack, a condition most favorable for the nutrition of muscles."

In entering upon the discussion of clinical evidence, Dr. Baruch remarked that, unfortunately, experience had been so often involved upon the subject by empirics that the profession had looked askance upon this argument. He said he agreed with the latest German author on therapeutics, F. A. Hoffmann, who states that he does not deal with the disease, but with the sick man, and who divides therapeutic methods into the direct, which acts by removing the cause, and the indirect, which by influencing the circulation and nutrition of one or more organs, or the general tissue changes, serves to remove the disease or make it recede. He would add a third method, *viz*: that by which we may so impress the various functions of the body (chiefly through the innervation which governs them all) as to enhance the resisting power of the patient, and thus enable him to escape the dangers which are known to be lethal. All these methods, he said he proposed to demonstrate, might be sought in the proper application of hydro-therapy, although he wished to be distinctly understood as not claiming this as an universal remedy, to the exclusion of drugs. The position in which he would place it was that of a valuable, indeed an indispensable, auxiliary to other treatment.

As he conceived it, hydro-therapy might be defined as the utilization of water at any temperature and in any form, from ice to vapor, internally or externally, for the treatment of disease. By such a definition it was emancipated from hydropathy, or the cold water cure, and placed clinically in the front rank of therapeutic measures. The modern discovery of the microbic origin of many diseases would, if verified by clinical experience, present a large field for therapeutic labor in this direction. Thus far less had been accomplished in this field than could be wished for; but in the gastric and intestinal diseases of infancy we seemed to be on the threshold of its fulfilment. Clinical study had demonstrated that many of these affections were due to toxic products derived from the microorganisms which had found their way into the alimentary canal, chiefly through milk food in summer; and to remove these, and reinstate the gastro-intestinal func-

tions, water had been used with great success. Intestinal irrigation carefully and thoroughly done with a large Nélaton catheter, with the patient on the abdomen, and by means of a fountain syringe holding not less than a quart of water, had proved the most efficient method of treating several types of summer diarrhoea, even after they had assumed a threatening phase.

Another hydropathic method, which acted by removing the cause of disturbance, was the sipping of hot water an hour before meals in dyspepsia. The hot water craze, which had now taken a firm hold upon the lay public, was but the legitimate outcome of a valuable therapeutic application of water whose simplicity commended it at once to the judgment of the intelligent physician. Brought into prominence by Dr. Saulsbury, who committed the error, so common among enthusiasts, of regarding his remedy as a panacea, it had become adopted by the profession as a most valuable agent in many gastric troubles, removing the products of fermentation, cleansing the mucous membrane, restoring tone and vigor to the gastric lining, and enabling the natural forces to come into play.

Having alluded to the successful management of ileus, as attested by Kussmaul and Senator, by irrigation of the stomach with large quantities of water, he spoke of the second method of treatment mentioned, viz: that which acts by affecting the nutrition and tissue changes. Among the affections amenable to this were neurasthenia and other nervous troubles, gout, rheumatism, obesity, scrofula, anæmia and chlorosis. For practical purposes in hydropathic management, he said, he divided neurasthenia into two types, the erethic and the true asthenic. The former, which was characterized by an irritability of the nerve forces, was most appropriately treated by soothing measures, such as cool ablution or prolonged wet packs, followed by the half bath at 65° to 70°, once or twice daily. The asthenic form, on the contrary, required the stimulus of the powerful reaction produced by the impingement of a mass of cold water for a brief period, and the effect was greatly enhanced by general faradization. Between these two extremes there were intermediate forms, to which the flexible procedures of hydrotherapy admirably adapted themselves.

Hysteria also presented a wide field for hydrotherapy. In his personal experience, he said, so many cases had yielded to the tonic influence of various hydropathic measures that he was firmly convinced of the extreme ability of this method of treatment. Here, too, he thought it was important to differentiate the types of the malady and adapt our procedures to each one with precision. In his private and hospital practice he now employed no other remedy in hysteria, and at the Montefiore Home for Chronic Invalids, where he was in attendance, three cases had re-

cently been discharged cured which had been admitted solely because they were believed to be entirely incurable. In chorea hydrotherapy had been found of the greatest possible service, although in this affection it was used as an adjunct to other treatment, and not as the exclusive therapeutic agent.

In various forms of neuralgia also it had won many triumphs, and in Dr. Baruch's hands sciatica has yielded more readily than other varieties. In the acute form the patient is wrapped in a dry woolen blanket and, after lifting the blanket, pieces of old blanketing, doubled and thoroughly wrung out of boiling water by means of a wringer, are closely applied to the affected limb over the region of the nerve. These are rapidly changed until the parts become thoroughly congested and the patient is bathed in perspiration, and this treatment is continued for about half an hour. The blanket is then removed successively from various parts of the body, beginning with the affected limb, and these are rapidly washed with water at 65° and dried. In chronic cases, in which the general health is impaired, the general tonic treatment by cold ablutions, douches or plunges is indicated.

In functional anæmia the tonic effect of hydrotherapy, he said, was especially pronounced, and for many years he had been in the habit of prescribing cold ablutions while the patient was still warm from the bed, as a prominent element in the treatment. In the early summer months, when the water was of a temperature of from 70° to 75° and the air not much warmer, the shock would be slight. Hence it was necessary to add ice to the water, or several basinsful might be precipitated over the shoulders and body from a height, in order to compensate, by the mechanical effect, for the absence of temperature difference. In winter his usual prescription was to stand in sufficient warm water to cover the feet, and, after turning the cold water on, to catch it up with the hand or a small pan and dash it over successive parts of the body, after which rapid drying and friction should follow. After the patient had become accustomed to the cold water he advised the plunge into a tub three-quarters full of water of not less than 55° nor more than 65°. Its duration, however, should not be longer than was required to wet the entire body. In diathetic diseases, such as gout and rheumatism, in which anæmia was present as a manifestation of deficient nutrition, excellent results might also be accomplished by the skilful adaptation of cold water to the case.

Having spoken in detail of the good effects of hydrotherapy in phthisis, chronic constipation and chronic gout and rheumatism, and given illustrative cases, he passed on to its use in febrile diseases, in which the third method of treatment referred to, viz: arming the patient for the battle

with disease, was illustrated. Statistics which were unimpeachable, he said, had demonstrated that the mortality from typhoid fever had been reduced from 25 per cent. to 2 per cent. by the systematic adoption of the Brandt method of cold bathing. In this connection, he said, he desired to reiterate the necessity of implicitly following an exact technique in hydro-therapy. Wrapping a typhoid fever patient in a sheet and sprinkling him with ice water, or sponging with cold water, could not be regarded as at all taking the place of cold bathing. The bath should be adapted to each case, and the fact should never be lost sight of that its object was not to reduce temperature, but to refresh the nervous system and enable the body to withstand the lethal influences at work in the regular process of the disease.

It ought perhaps to have been mentioned that three patients with phthisis treated by hydro-therapy, in addition to other remedial measures, at the Montefiore Home gained respectively 10, 11 and 17 pounds, while the symptoms of the disease became greatly ameliorated or disappeared altogether.

In the discussion which followed the paper Dr. George L. Peabody said that it was a matter of surprise to him that it should at the present time be necessary for Dr. Baruch to urge upon the profession the advisability of making use of cold baths in the febrile diseases. It seemed, however, that the old prejudice against this procedure had been revived and amplified, it being regarded by many as dangerous to suddenly alter the temperature of the medium with which the patient was surrounded. But so far from this being the case, it was a fact that it was almost impossible to give a patient cold who had a temperature much above the normal. We certainly ought not to be satisfied with the results at present obtained in typhoid fever. The proportion of deaths was from 20 to 30 per cent., and this was much higher than in many of the European hospitals, where cold bathing was regularly employed. Brandt's latest statistics of typhus and typhoid embraced nearly 6,000 well-authenticated cases in which his method was systematically practiced, and the percentage of mortality was only 3.9. Why was not this method generally adopted here? Because, as Prof. Horatio Wood had said, the medical profession had not yet risen above the existing prejudice against it. Another reason was because the method was troublesome and expensive, requiring a portable bath-tub and the services of two attendants. There was no question that the full bath, at a temperature of from 65° to 70°—68° being the best for the average class of cases—was much more beneficial than any other application of water; the bath being repeated sufficiently often to keep the body temperature at or below 102°.

Dr. A. A. Smith said that when he recently

succeeded Dr. Flint in the medical service of Bellevue Hospital there were four cases of typhoid in the wards which had been treated by the cold bath method with perfect success, and he had carried out the treatment as long as it was required. Since then, however, five cases had been admitted none of which seemed to him to justify the adoption of this procedure; and he thought, therefore, that a very large number of cases were required to base any results upon.

In answer to a question by Dr. M. P. Jacobi, as to whether he would employ the baths in a malignant case of typhoid with low temperature, Dr. Baruch said that he certainly would if the temperature was as high as 102°, although in a somewhat modified form. He would place a patient of this kind in a tub of warm water, and then employ short affusions of cold water over the shoulders.

P. B. P.

BOOK REVIEWS.

AN INTRODUCTION TO PATHOLOGY AND MORBID ANATOMY. By T. HENRY GREEN, M.D., PHYSICIAN TO CHARING CROSS HOSPITAL, ETC. SIXTH AMERICAN FROM THE SEVENTH ENGLISH EDITION. Revised and Enlarged by STANLEY BOYD, M.B. Lond., F.R.S. Eng.

The fact that in so short a period of time this work has run through seven editions in England, and six editions in America is ample evidence of its value and of its popularity. The practitioner and the student alike have found in it the latest and most reliable expressions of pathological research. While the former editions are too well known to require minute description, it should be stated with reference to this last, that it has been so far re-written, as to include the latest accepted views and the latest investigations in the several departments of pathological study. Thus the chapters on Inflammation, Fatty Degeneration, and Vegetable Parasites, have been essentially recast, and will, we think, be found accurate up to date.

The Genesis of Cells; the Etiology of Disease; the Arrest of Nutrition; the Various Forms of Degeneration; the whole subject of Tumors; Carcinomata; the Blood; Inflammation; Fevers and Infective Granulomata; Scrofula; Leprosy; Syphilis; Glanders; the Inflammation of Special Tissues; Septicæmia; Pyæmia and the Vegetable Parasites are the subjects of which it treats in a lucid and masterly manner.

The work containing over five hundred pages is well illustrated, and the publishers, Messrs Lea Brothers and Co., have produced it in the exceptionally fine style and finish characteristic of their publications. It contains a large amount of valuable instruction, such as every physician

needs, and it should have its place in every medical library.

For sale by A. C. McClurg & Co., 117, 119 Wabash Ave., Chicago. Price \$2.75.

A TEXT-BOOK OF HUMAN PHYSIOLOGY, including Histology and Microscopic Anatomy, with special reference to the Requirements of Practical Medicine. By DR. L. LANDOIS, Professor University of Greifswald. Third American, Translated from the Sixth German Edition, with Additions by WM. STIRLING, M.D., Sc.D., Professor of Physiology and Histology in Owens College, etc.

This great work of Dr. Landois is well known to the medical profession. Its successive editors in Europe and in this country have been rapidly exhausted, and special credit is due to Messrs. P. Blakiston, Son and Co., for the admirable manner in which they have now brought out the third American edition. It is idle to attempt in this brief review, any elaborate description of this valuable treatise. In its treatment of its various subjects, the work is exhaustive, and yet never tedious.

The approved methods of physiological investigation are so clearly expressed, and often so exquisitely illustrated that the student is able to follow the master through each and every demonstration.

Much as we have esteemed our own American Text-Books, it is with no disparagement to any that we assign for this work the foremost place in its methods of dealing with human physiology, histology and microscopical anatomy.

The work is published in the best style of the publishers, and its profuse illustrations are a credit to the engraver's art. It will be deservedly popular, and will render a valuable service to the American profession.

MISCELLANY.

MEDICO-CHIRURGICAL FACULTY OF MARYLAND.—The semi-annual meeting of the Medical and Chirurgical Faculty of Maryland was held at Hagerstown on November 12 and 13. The address of welcome was delivered by Dr. A. S. Mason, of Hagerstown, followed by remarks by the President, Dr. A. Friedenwald, of Baltimore. Papers were read by Drs. J. J. Chisolm, Robert W. Johnson, Edwin Michael, George H. Rohé, William B. Canfield, Joseph T. Smith, Randolph Winslow, T. A. Ashby, S. T. Earle, William Lee, J. N. Mackenzie, and George J. Preston.

LETTERS RECEIVED.

Dr. L. D. Gorgas, Chicago; Dr. F. E. Schenk, Harveyville, Kan.; Dr. L. Reynolds, Horton, Kan.; Dubuque Water Co., Dubuque, Ia.; Dr. Wm. S. Stewart, Philadelphia; Dr. W. P. Northrup, New York; Dr. J. T. McShane, Carmel, Ind.; I. Haldenstein, New York; Dr. R. C. Ward,

Northfield, Mass.; Peter D. Pinke, New York; The Cosmopolitan, New York; Dr. A. N. Bell, Brooklyn, N. Y.; Dr. C. O. Owen, Eola, Ia.; A. A. Marks, New York; Dr. E. Elmer Keeler, Syracuse, N. Y.; W. H. Schieffelin & Co., New York; S. H. Parvin's Sons, Cincinnati, O.; Armour & Co., Chicago; Dr. W. C. Curtis, Farmington, Minn.; Dr. G. E. Frothingham, Detroit, Mich.; Dr. E. F. Brush, Mt. Vernon, N. Y.; The Stewart Ceramic Co., New York; Dr. H. L. Getz, Marshalltown, Ia.; Dr. W. H. Merry, Lynn, Mass.; Dr. James A. Hoffman, Newark, N. J.; Longmaus, Green & Co., New York; Valentine's Meat Juice Works, Richmond, Va.; Dr. J. P. Thomas, Elmo, Ky.; Dr. Charles Denison, Denver, Col.; Dr. J. McF. Gaston, Atlanta, Ga.; Woman's Medical College, New York; Dr. A. H. Kinnear, Henry, Ill.; Dr. R. L. Sutton, Pittsburg, Pa.; Dr. N. Senu, Milwaukee, Wis.; Med. Dept. University of Maryland, Baltimore, Md.; Dr. R. J. Duglison, Philadelphia; Guaranty Investment Co., New York; Dr. R. M. Jordau, St. Louis, Mo.; Dr. B. M. J. Conlin, Alexandria, Dak.; The American and Continental Sanitas Co., New York; Dr. T. H. Woodward, Lincoln, Neb.; Lea Bros. & Co., Philadelphia; Dr. Frank DeVilbiss, Spring Garden, Mo.; Dr. Thos. Hay, Philadelphia; The Cleveland Medical Gazette, Cleveland, O.; The Microscope, Trenton, N. J.; Dr. A. I. Thomas, Chicago; Dr. George W. Davis, Kansas City, Mo.; Dr. Chas. P. Knapp, Wyoming, Pa.; Dr. Frank Trester Smith, Chattanooga, Tenn.; Dr. C. H. A. Kleinschmidt, Washington; Dr. J. D. Couch, Somerville, Mass.; Dr. Joseph Eastman, Indianapolis, Ind.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from November 16, 1889, to November 22, 1889.

By direction of the Secretary of War, the extension of leave of absence on surgeon's certificate of disability granted Major Leonard V. Loring, Surgeon, in S. O. 241, October 16, 1889, from this office, is still further extended one month on surgeon's certificate of disability. Par. 3, S. O. 263, A. G. O., Hdqrs. of the Army, November 16, 1889.

Capt. Edward B. Moseley, Asst. Surgeon, is relieved from duty at Whipple Bks., Ariz., to take effect upon the expiration of his present leave of absence, and will report in person to the commanding officer, Ft. Clark, Tex., for duty at that station, reporting by letter to the commanding General Dept. of Texas. Par. 4, S. O. 268, A. G. O., November 16, 1889.

Capt. Walter W. R. Fisher, Asst. Surgeon, is relieved from duty at the Presidio of San Francisco, Cal., and will report in person to the commanding officer, Ft. Assiniboine, Mont., for duty at that station, reporting by letter to the commanding General, Dept. of Dakota. Par. 4, S. O. 268, A. G. O., Hdqrs. of the Army, November 16, 1889.

Capt. Rudolph G. Ebert, Asst. Surgeon, leave of absence on surgeon's certificate of disability granted in S. O. 109, May 11, 1889, from this office, is extended six months on surgeon's certificate of disability. Par. 13, S. O. 270, A. G. O., Hdqrs. of the Army, November 19, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 23, 1889.

P. A. Surgeon W. H. Rush, ordered to U. S. S. "Saratoga."

Asst. Surgeon J. F. Uric, from coast survey Str. "Gedney" and to the U. S. S. "New Hampshire."

Asst. Surgeon P. H. Bryant, from the Norfolk Hospital and to the coast survey Str. "Gedney."

Asst. Surgeon Geo. T. Smith, from the Army and Navy Hospital, Hot Springs, Ark., and to Naval Hospital, Norfolk, Va.

Asst. Surgeon E. P. Stern, after examination for promotion await orders at Boston, Mass.

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ADDRESSES.

THE AMERICAN ACADEMY OF MEDICINE;

OBSTACLES TO THE GENERAL ADOPTION OF THE PRINCIPLES OF THE ACADEMY.

*Address of the President delivered at the Annual Meeting in Chicago,
Ills., Nov. 13, 1889.*

BY LEARTUS CONNOR, A.M., M.D.,

OF DETROIT, MICH.

(Concluded from page 762.)

We are compelled to admit the existence of another side of the picture. There are numerous serious obstacles to the rapid adoption by the medical colleges of a high grade of preliminary requirements from their students. Among these we note a few:

1. According to statistics collected by the late President Barnard, of Columbia College, it appears that, the proportion of literary college students has diminished during the past fifty years from 1 in 2,000 of the entire population to 1 in 2,500. During these fifty years the population has increased about fourfold; the number of colleges threefold, but the aggregate number of students in all the colleges but little more than twofold. The causes that have thus diminished absolutely the number of bachelors of arts we cannot discuss, but the fact exhibits one reason why more bachelors of arts are not found in the medical profession, and why a high degree of preliminary requirement is not generally regarded as necessary for entering upon the study of medicine. Significant of the continuance of this tendency of the age is the election of Ex-Mayor Low, of Brooklyn, N. Y., to the presidency of Columbia College. That a wealthy and successful business man, an able and astute politician with no practical training in the art of teaching, should be placed at the head of one of the most prominent literary colleges of the United States, is certainly a spectacle worthy of the most careful study. Has business so absorbed the best brain of the land, that from its ranks must be chosen the leaders of the intellectual and moral training of the country? If so, then we have to meet an obstacle of the first magnitude in the prosecution of our work. In any event we are a

part of that protest which every scholar must utter against any and every capitulation of intellectual and moral life to commercialism. At every turn we shall be opposed by the trade spirit cripples the efforts of not a few members of this Academy. One of our distinguished members in his labors said that he was most discouraged by some of those having abilities refusing to attempt certain work because it would not aid in filling their offices with patients, and their pocket-books with dollars. Recognizing our foe, we shall not be surprised at his unexpected and unwelcome presence, but be ever prepared to do what we can to thwart his purposes.

2. It is an historic fact that the medical colleges have constituted a powerful obstacle to an increase of the preliminary requirements. The history of the profession of Ontario fully substantiates our proposition. The colleges there were finally compelled to yield, as at last they must in the United States. This action of the medical colleges is based upon the trade aspect of their work. Adequate preliminary education, if exacted by all colleges, would reduce the sum total of student's fees, and other perquisites. The exaction by one school having no other advantages than its rival, of a high admission examination, would send a portion of its students to its rival. So in a variety of ways the principles of the Academy antagonize the trade interests of the medical colleges. Hence we can understand the efforts they put forth to defeat the enactment of laws adequate for the certain enforcement of an honest efficient preliminary examination and rational college training. That which has been made public is probably only a tithe of the antagonism already existing. Dr. P. H. Millard in the report already referred to, says "that only those who by their official position have been compelled to enforce the medical Acts of Minnesota, Illinois, Missouri, West Virginia, etc., can appreciate the obstacles and intolerable embarrassments encountered in their execution. The most captious criticism and formidable opposition came from the profession itself. This criticism and opposition did not come from the narrow minded cynic alone, but to the shame and disgrace of the profession, from a large number

of our medical institutions, some of which, we regret to mention, were manned by men of eminence and great learning, but had carelessly for financial reasons, given cognizance to an opposition to a reform which was entitled to the undivided support and encouragement from every member of the profession from the Atlantic to the Pacific. Of the nine attempts, to repeal the present Minnesota Practice Acts, at the last session of the Legislature of Minnesota, a majority of the professed amendments emanated directly from the medical colleges themselves." The evidence is overwhelming of the open and covert opposition of the mass of medical colleges to all enactments tending to limit the numbers of their students, and among these must be classed a proper preliminary education. They love large classes better than small ones. Reforms that will benefit their individual interests they will adopt, all others must receive their condemnation.

Many years ago the speaker attempted to persuade a member of this Academy, known the world over for his great learning, splendid abilities and apparent devotion to the advancement of the medical profession, to exert his influence with his own college to establish a preliminary examination, and a three years' graded course. He listened to me patiently, and when my plea was finished, he said: "My dear doctor, I believe in the absolute truth of what you say. By no other means can medicine be properly taught. For more than two score years I have said to myself as I finished my course of lectures, 'another farce ended.'" But he said, placing his hand upon his pocket-book, "the real trouble lies just here. The doing as you suggest by my college would diminish its income and the salaries of its teachers. We cannot do it." He did not do it, nor has his college done it to this day. I suspect that it never will do it until it can be shown to pay in money.

Admitting this hostility of the majority of medical colleges to the principles of the Academy what can it do in the matter? Its collective wisdom can most wisely answer this question, but it would seem evident, that the members of the Academy could cast their influence with such colleges as honestly did enforce an adequate preliminary examination. It could also assist in the enactment of such State laws as will compel all colleges whose diplomas are recognized within its borders, to enforce proper preliminary training. In one or both of these ways it might finally be made profitable for the hostile colleges to join in the vigorous prosecution of our work.

3. It is unfortunate, for the cause of preliminary education, that so large a proportion of the professors in medical schools fail to possess the training needful for the acquisition of the degree of A. B. Not possessing this training they are unable to comprehend its value to their stu-

dents, and so are little likely to encourage them to obtain it. Naturally they oppose the requiring by their college of a higher general education than they individually possessed. They became professors, because of the fact that they had money or push to invest in the business enterprise, which was to enable the professors to distance all their competitors in the profession. Those who were not taken in gathered together of the remaining doctors in the town those having the most money, and push to the end that they might make as large an impression as their rivals, and so get as much or more business, and so make as much or more money, and so attain as extended a notoriety. It is beyond a question that most of American medical colleges originated in one of the two ways mentioned. From this origin it is clear that the general education of the professors was the least important item. Some were organized in other and less mercenary ways, others have outgrown the character with which they were born, so that there are medical colleges whose teachers are all that could be desired. Doubtless the remainder will be changed with the natural progress of events. It might be helpful in promoting this change if the exact number of bachelors of art among the professors could be ascertained and published to the profession and the laity. We cheerfully admit that many excellent practitioners and able teachers are found, among the professors of medical colleges, without the degree of bachelor of arts, men who have supplied by later studies the deficiencies of their youth. These are men of commanding abilities and indomitable energy who would have conquered all obstacles in any calling. But others in large number exist whose early defects have not been rectified in this manner, and whose presence in the lecture room of the college is an offence to any well educated, well bred person.

4. The lukewarmness of so many members of the Academy is another obstacle to the effective prosecution of our work. Those not members, notice and comment upon this state of things. They see members teaching in medical colleges which maintain no preliminary examination; they see members taking students under their direction who have the merest smattering of general knowledge; they observe at the yearly meetings of the Academy only two or three score members present; they rarely, if ever hear members speak of the Academy and comment upon it to the physicians about them; in all these respects they differ little, if at all, from non-members of the Academy. True, the Academy has ever had a remnant to whose faithful services it owes its continued existence. The remedy for this state of things is for each member to arise and enter upon his proper duties as a disciple and preacher of the doctrine of the advancement of general education in the medical profession.

5. Lastly, our greatest obstacle is the extensive general ignorance throughout the medical profession. I had collected verbatim letters illustrating the degree of this ignorance, but from lack of time I will not read them. Nor can I dwell upon the prevalence of this ignorance. It is everywhere apparent to the annoyance of the well educated. Medical editors, secretaries of medical societies, and all having large correspondence with the profession, tell the same story of the constant exhibition of a vast amount of actual illiteracy among members of the medical profession. It is a humiliating fact, that the medical journals having the largest circulation are those who cater to this illiteracy. An editor himself, a man of general and special culture, in response to my expression of wonder that he could have any connection with a medical journal of this class said: "I know well this element in the profession. It regards a really good medical journal as a 'kid glove' affair fit only for the 'aristocrats.'" They will not take, nor will they read such a journal. Hence, it is better to make a far inferior journal that they will take and read. This, he said, is the reason for the existence of those medical journals so offensive to the really intelligent practitioner. He then gave me the following picture of such subscribers as he had found them. "The typical doctor of this sort spends much of his time gossiping in the saloon or in the grocery. His office is as dirty and unkempt as himself. While there, his favorite posture is to sit in an old greasy chair with his feet upon an old dirty, dilapidated table. With an old pipe in his mouth he puffs and spits about his pen, removing his pipe only as necessary for conversation to his patient. When the mood takes him he writes to his medical journal. With lead pencil, and a piece of brown wrapping paper, he gives expression to his ideas, in language and forms quite unknown in classical English." All will admit that the presence of such men in the profession constitutes a formidable obstacle to the work of the Academy. To limit additions to their ranks is one of the ends sought by the Academy.

Since our last meeting the Academy has lost several of its members by their journeying to that country which persistently receives and never returns its visitors. Preëminent among these, was Dr. J. L. Cabel, for fifty-two years a teacher in the University of Virginia. During this entire period he was known as the typical gentleman of culture and refinement, the teacher of living medicine, able to inspire his pupils with that enthusiasm imperative for attaining the best results; the learned scholar who from time to time gave of his labor for the benefit of his fellows, freely, fully and without price; the professor whose councils aided in establishing and main-

taining a sound system of training for medical students, a system peculiar to the University of Virginia; a sanitarian high in the councils of his fellows; not to particularize further a man typical of the best development of his race. Like a ripe sheaf he was gathered to his fathers when his life had been fully rounded out. Last January I wrote, asking him to assume the duties of chairman of the committee on new members. I knew that his name would carry great weight among both old and young, in all groups of physicians in every portion of the land. Almost by return mail I received a long letter from him, explaining in detail that for some years he had been compelled to forego the pleasure of engaging in such work, though often solicited by gentlemen whom he specifically mentioned. He said that he wrote thus in detail lest the Academy might think that he desired to shirk any duty to the profession he loved so well, or to the Academy whose principles had been his life long standard. Had his physical condition admitted, he said this service to the Academy would have been performed with the greatest delight. As President of the Academy, I responded to this touching letter in terms such as would have sprung from the heart of any member. To this he replied on February 1, thus: "I have this moment received your very kind letter of the 29th ult., and I cannot resist the impulse to tell you how much gratified and touched I am by your generous expressions of sympathy and regard, not to speak of your too flattering estimate of the little work I have done with a view to the elevation of the standard of medical education, and to the furtherance of all enterprises looking to the improvement of our common profession."

Dr. Stephen Weeks, of Orange, N. J., one of the early members of the Academy, and Dr. William Elmer, of Brighton, N. J., have also passed to the unknown shores. The first was born in 1813, and the other in 1814. Both came of stock distinguished for its culture, and largely impregnated with the pursuit of medicine. Dr. Elmer was formerly a Vice-President of the Academy. We also note the deaths of Dr. Theodore I. Wing, of Susquehanna, Pa.; Dr. James Foultes, of Oakland, Cal.; Dr. James Kerr, of York, Pa., and Dr. J. I. Miner, of Wilkesbarre, Pa.

Our meetings are marked with two acts typical of human life. We record the admission into our ranks of members, and we note the passage of others from our ranks into the land of the majority. We remain between this advancing and retiring column in which narrow space we complete our work. In full view of these, let us ponder the problems before us, decide upon our line of action, and joyfully march to the conflict. As physicians, we are bound to cherish and keep bright the golden thread of professional truth, honor, and progress, which connects us with the

portion of our army already passed beyond our ken, that when we join it, a still brighter thread will be left to guide those following us. As men we will ever exhibit a manly independence and kindly affection toward all, so that when our turn comes to join the departed throng we shall do so with the consciousness that we have done what we could for the uplifting of our fellows and the ennobling of our race.

ORIGINAL ARTICLES.

INTESTINAL DISEASE OF CHILDREN DURING HOT WEATHER.

Read in the Section of Diseases of Children, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY PETER HOOPER, A.M., M.D.,

OF PHILADELPHIA, PA.

The causes of intestinal diseases in hot weather are mainly heat, impure air and improper food. Heat alone is evidently not the sole cause of intestinal diseases of children in hot weather, for relatively these diseases are more prevalent in the city than in the country. Still, heat is a potent factor, and I will consider this first.

The local abstraction of heat from the bodies of children suffering from entero-colitis or gastro-enteritis, I have always found to be productive of good. The use of cold water and cracked ice internally is also beneficial. Cold water compresses or the ice-bag applied to the head will reduce fever, and whenever I have used it there has been an improvement in the diarrhoea also. Since gastro-enteritis is chiefly a disease of hot weather, our object should be to lower the temperature, and this can be done by the keeping of large pieces of ice in the sick-room. The following case came under my care June 12, 1887:

H. S., aged 8 months. When I first called to see the child he had been sick for two weeks. Measles and gastro-enteritis was the history given to me on my first visit. I found the little patient in almost incessant convulsions, with rapid breathing, the pulse quick and jerking, the carotids strongly pulsating, the pupils contracted, the sphincters relaxed, and having very thin fecal evacuations. The temperature in the axilla registered 109 $\frac{3}{4}$ ° F. The treatment was the immediate use of the cold pack. Ice was rubbed down the spine and a block of ice was placed under the neck. In half an hour the temperature had fallen to 105° F., nothing being given internally. I directed that, during my absence, the same treatment be continued whenever there was any rise in the temperature. Chronic entero-colitis of several weeks' duration followed. During this time I continued the use of ice and ice-cold water externally and internally, and calomel, pepsin, bromide, bismuth and quinine suppositories were given whenever they were indicated. The mother

kept the child out of doors in the cool air and shade a great deal of the time. This she was able to do by going to the old family homestead, which had shady grounds and an unobstructed exposure a great distance in front of the house.

The principal infant foods were badly digested, and no improvement was made until cow's milk was given, peptonized at first and afterwards pure, being obtained from a farm near by. In October of the same year, while the child was still under treatment, hip-joint disease developed, which was cured by deep massage and inunctions of lanoline. Chorea next developed and remains to this day. Excepting this disease the child is healthy and well nourished. In this case the free use of ice and ice-water, both externally and internally, was always followed by the reduction of fever and improvement of the diarrhoea.

The internal use of cold water given freely is very often beneficial. The vomiting is often increased at first, but this does good by washing out the stomach. Afterwards a sedative effect is produced, which is a valuable step gained in that food and medicines are better borne. The use of cold drinks and cold applications is good in entero-colitis and gastro-enteritis.

In entero-colitis the fecal evacuations may be nearly uniform, or they may change in color at different times. They contain altered epithelium cells, partly digested casein, and sometimes mucus or mucus streaked with blood. Besides the free use of cold water or ice internally and externally it is good to use enemata of tepid water or medicated water to wash out the lower bowel. Enemata are useful when the movements contain mucus with or without blood. By this means the colon is washed out. Their benefit is limited, however, for the tepid or medicated clysters can not go beyond the ileo-cæcal valve, and often the small intestines are the seat of most of the inflammation.

I have not enough experience with washing out the stomach to say much for or against it. I have known of deaths occurring while one or both of these treatments were being used. In the last stages, when collapse is present, I hardly think they are admissible.

In cholera infantum, when the child has the characteristic stools, viz: an acid, greenish-yellow fluid containing lumps of undigested food and casein, and, later on, evacuations similar to the discharges of Asiatic cholera, absolute rest of body and abstinence from food for twelve or fourteen hours are indicated. During this time plenty of cold water to drink or a piece of ice to suck or swallow, if the child is old enough.

Impure air is also one of the causes of intestinal diseases of children in hot weather. The first three years of my practice in Philadelphia I attended, during the summer months, a great many children suffering with intestinal diseases in one

of the poor sections of the city. The sanitary condition of the houses and neighborhood was deplorable. The water-closets were filled to overflowing, the streets were dirty, and decaying portions of vegetables were exposed to the heat of the sun. As a result of this impure air the death-rate was very high, and could only be lowered by getting the parents to take their sick children to some free sanitarium from day to day.

The use of improper food is another cause of intestinal diseases in hot weather. The mother's milk is the proper food for children. It is, however, exceptional for a mother to be able to nurse a child the entire first year of its life, so that a resort to other foods is wholly or in part a necessity. I have almost abandoned the use of milk foods. It has been my experience that children using them do not grow so strong, muscular or so rapidly as they should. When the mother's milk fails, or when it is possible to nurse the child only in part, my preference is for sterilized milk. Cow's milk, due to the handling it undergoes, is apt to disagree with children in hot weather; but when it is given sterilized, intestinal diseases are much less frequent. In some cases no dilution of the milk is necessary, as I have known many children fed on cow's milk from birth and it agrees well with them when obtained fresh. I attend one large family of children who are fed in this way, and none of them have ever suffered with intestinal diseases.

Prophylaxis.—In intestinal diseases of children prophylaxis is very important. Give the child plenty of cool, fresh air, without exposure to the intense heat of the sun. Sunshine in moderation is beneficial, as it develops the red blood corpuscles and prevents anæmia. The advantages of sunshine are seen in both the vegetable and animal kingdoms. According to Dalton, the tadpole requires nine months in the shade to change to a frog, whereas in the sunshine it takes but three. The dress is important also. Flannels should be worn all the year round, and a thin abdominal bandage day and night. The child should be bathed morning and night, kept as cool as possible during the heat of the day, and have cold water to drink and cold sponge baths to the head. By care and these particulars sickness may often be avoided and lives saved that would otherwise be lost.

Therapeutics.—In entero-colitis always begin with castor oil, guarded, if necessary, with opium; or calomel and bicarbonate of soda, if the fecal evacuations show a tendency to acid fermentation; if alkaline, bismuth subnitrate or subcarbonate may be used in place of the soda. Calomel and bismuth are antiseptic and antiemetic. Bismuth is also mildly astringent, and its local action on the inflamed mucous membrane is sedative. If there are no indications of convulsions, stupor or collapse, opium in small doses combined

with pepsin, or with pepsin and bismuth, answers well. The opium arrests the peristaltic action of the bowels and quiets the nervous system, while the pepsin aids digestion. Bromides and assafoetida may often be used in place of opium. When the nervous symptoms preponderate, equal parts of turpentine, sweet oil and laudanum, heated as hot as can be borne by the nurse's fingers, should be rubbed down the spine twice a day; and when pale, limpid urine is passed, it is more important to attend to it than to highly colored urine; for when it is pale and limpid a neurotic state of the kidneys exists, and powerful nerve stimulants should be given.

In cholera infantum very much the same treatment should be adopted, but stimulants should be used more freely. Probably the heroic treatment of the future, when other means fail, will be to open the abdomen and wash out the whole of the intestinal tract.

In all acute and chronic cases of intestinal diseases of children I cannot speak too highly ofunctions of almond or olive oil. If the child is rubbed two or three times a day with oil, an improvement in its condition is soon apparent. The advantages of this treatment are: First, a reduction of fever soon after the oil is applied; second, it nourishes and supports the child, which is a great desideratum when digestion is carried on imperfectly; third, it regulates the functions of the skin, which, when hot and dry, regains its natural moisture after the use of the oil. Effete material is more readily eliminated, the epithelium is softened, and the transudation of gases takes place more rapidly through the skin, oxygen being absorbed and carbonic acid gas thrown off. The importance of and benefit to be derived from bathing was early recognized by the ancients. Under the Roman emperors the baths attained a grandeur and magnificence that almost challenges belief. A great number of acres were covered by the baths of Diocletian and Caracalla. The world recognizes that the system of bathing attained its greatest perfection in the Roman empire during the days of Celsus.

At the present time there is a tendency to appreciate more fully the advantages of bathing, not only as an essential and necessary means of cleanliness, but also as a therapeutic agent for relieving, and sometimes curing, many obstinate and chronic diseases which do not respond readily to other modes of treatment.

The pepsin used should be soluble and as pure as possible. An insoluble pepsin contains inspissated mucus and ptomaines, and realizing that there is a great difference in the activity of the various preparations of pepsin, and the importance of selecting the best variety, I decided to test some of the pepsins of the market. The samples were procured from a druggist from the pepsins he had in stock. They were prepared

and labeled Nos. 1, 2, 3 and 4. Each sample contained a triturate composed of one-tenth of a grain of pepsin and nine-tenths of a grain of milk sugar. I did not know, at the time I procured the samples, whom they were manufactured by.

Test.—Several eggs were boiled for fifteen minutes, allowed to cool, and the coagulated albumen was freed from the yolk and superficial moisture, then pressed by a spatula through a brass sieve having thirty meshes to the linear inch. After thoroughly mixing the moist and divided albumen I weighed out and transferred 200 grains of it to a mortar; 110 ccm. of water acidulated with hydrochloric acid, in the proportion of 50 minims to the pint, was used, and the albumen carefully triturated with the same. The water was used in portions, so that a uniform division was obtained of the particles. This was transferred to the small cylinder placed in the apparatus, to which a water bath is attached, and where a temperature of 104° F. was sustained for six hours with frequent rotations of the digestive fluid by the pistons of the apparatus. After the stated time of the operation the cylinders were cooled and the activity of each pepsin as to its digestive power was noted. No. 1 was the only one which had digested all the albumen. This potent production is known as pepsin purum in lamellis, and is manufactured by Parke, Davis & Co. As nearly as I could ascertain without weighing the albumen in the other tubes, No. 2 had digested $\frac{7.0}{100}$, and Nos. 3 and 4 about 30 per cent. of the albumen in the respective tubes. The other specimens of pepsin tested were: No. 2, Fairchild's; No. 3, Boudault's; No. 4, Proctor's.

DR. J. SOLIS-COHEN, of Philadelphia, commended the use of cold water and ice externally as a means of reducing temperature, and deprecated the exhibition of the chemical antipyretics, which are usually cardiac depressants, and which aggravate the tendency to heart failure.

DR. J. A. JEFFRIES, of Boston, also advocated external cold.

DR. J. A. LARRABEE, of Louisville, considered it of great importance for the proper application of therapeutics to distinguish between the various diarrhoeal diseases. Are all these diseases the same, and do they demand the same treatment? In one class could be placed thermal diarrhoeas. The condition of the patient was similar to that in sunstroke, and the therapeutic indications were identical. Here the remedy, *par excellence*, is the external use of cold. He differed with Dr. Hooper in his conception of the term cholera infantum. Cholera infantum is a disease in infants similar in its clinical manifestations to cholera in the adult. It is in all probability caused by ptomaines. It is not usually preceded by ordinary diarrhoea, but begins suddenly. From the first, then, is the characteristic vomiting and their

watery stool. There is rapid abstraction of serum from the blood and the child quickly becomes pale, pinched, blue and cold and, unless relief quickly comes, dies. Cases of this kind must be differentiated from thermal diarrhoea and the other forms. Therapeutic measures must be immediate. There is no time for the exhibition of the ordinary remedies. For ten years he has been in the habit of treating these cases by the hypodermic injection of morphia and atropia. He gives about $\frac{1}{200}$ gr. morphia and a very small amount of atropia to a dose. A convenient method is to dissolve a tablet containing $\frac{1}{4}$ gr. morphine and $\frac{1}{60}$ gr. atropin in an ounce of water and inject 10 drops in a child 1 year old. This treatment has been very successful. For the often following diarrhoea he resorts to antiseptics, and chief among them he ranks calomel; for enterocolitis he prefers evacuates in the early stages. He has great faith in salines to relieve the strangulation of the vessels. For chronic cases he has had good results from frequent inunctions of oils.

DR. WM. PERRY WATSON considered it very important, as a prophylactic against diarrhoeal disease, to keep the legs and lower part of the body warm. In many cases milk, however prepared, cannot be retained. When this is so he stops the administration of milk and gives oatmeal water seasoned with salt and sweetened with sugar. It is given cool, in small quantities at a time, and at regular intervals. In the meantime, if the child cries, a little hot water may be given. It is an excellent remedy for ordinary colic. Cholera infantum usually follows other forms of diarrhoea, but may occur suddenly. It usually comes on the third or fourth of a series of hot days.

DR. E. F. BRUSH said that by visiting cow pastures one could predict the occurrence of epidemics of diarrhoeal diseases among infants. In favorable localities, when grass is good, cows refuse to eat certain weeds, as lobelia, poison ivy, buttercups, etc. Little clumps of these weeds may be seen dotting the pasture. When hot, dry weather comes and the grass is scarce, the cattle eat these weeds and the poisons taken by the cow are excreted in the milk. These poisons are gastro-intestinal irritants and give rise to cholera infantum in bottle-fed babies. Such milk even poisons and sometimes kills sucking calves. His treatment was to stop the milk and give chloroform in emulsion with castor oil and gum arabic. He condemned the use of artificial commercial foods. He had investigated the manufacture of these foods, and he had found that they were too often made of various refuse materials. When a manufacturer had a waste product that he did not know what to do with he made it into an infant food. He knew of one that was made of salmon roe and another from the whey from a cheese factory. One preparation of beef in the market was

made of the blood from slaughter-houses, preserved with whisky. The great advantage of the home preparation of food was that it was then known what was being given.

DR. I. N. LOVE said that he would use commercial foods as he would drugs—with great discretion, and never when other means were at hand and equally good. These foods were tools, and the physician can not always stop to make them. Again, it is not always possible to get what we wish at the homes of patients. Home manufactures can not always be trusted. He was sorry to learn that men engaged in the manufacture of these foods could be so base as to put filthy refuse on the market for so sacred a purpose as the feeding of infants. He could not condemn too severely such action, but he could not believe that all manufacturers were so dishonest.

A RARE CASE OF PRIMARY LYMPHOID TUMOR SPRINGING FROM THE FLOOR OF THE RIGHT PYRIFORM SINUS. REMOVAL THROUGH THE NATURAL PASSAGES. PERMANENT RECOVERY.¹

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY JOHN NOLAND MACKENZIE, M.D.,

PRESIDENT OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION; PHYSICIAN IN CHARGE OF THE DEPARTMENT OF LARYNGOLOGY AND RHINOLOGY IN THE JOHNS HOPKINS HOSPITAL DISPENSARY; CLINICAL PROFESSOR OF DISEASES OF THE THROAT AND NOSE IN THE UNIVERSITY OF MARYLAND; AMERICAN EDITOR OF THE JOURNAL OF LARYNGOLOGY AND RHINOLOGY; SURGEON TO THE BALTIMORE EYE, EAR AND THROAT CHARITY HOSPITAL, ETC.

Mr. C., æt. 42, 5 ft. 10 in. high, weight 220 lbs., of Leesburg, Va., a prominent divine of the Methodist Episcopal Church, South, consulted me May 4, 1885, on account of an obstruction in the throat which seriously interfered with his vocation as a public speaker and which, when he assumed the recumbent posture, threatened suffocation from pressure on the windpipe.

Mr. C. was otherwise in perfect health and could assign no cause for the existing state of affairs. Deliberate and natural in his style of declamation, he had occupied the pulpit without detriment to his vocal organs for over twenty years. Although convinced that the trouble causing the obstruction originated at an earlier date, the first time he felt sure there was anything the matter with his throat was about eight months prior to the time at which he came to me for advice. At that period he became aware of a sensation which he compared to a piece of phlegm in the throat which seemed fastened to

the epiglottis, and which could not be removed by expectoration. Soon after, difficulty in public speaking was experienced; the throat would clog up when it became dry in speaking or when an effort was made to swallow. At the same time something would seem to sink down into the throat and close up the windpipe. He consulted his physician in Warrenton, Va., where he then resided, and was told that the uvula was elongated and lying on the tongue, and was given astringents to contract it. Several months of this treatment failing to remedy the disorder, he had the uvula "clipped" by a physician in Baltimore. This failing also to relieve, he returned to his native place and again consulted his former adviser, who found the soft palate considerably inflamed and the whole palatine arch in a relaxed condition, so that the mucous membrane "sagged down like a wet sheet." This condition was dissipated apparently by a few weeks' treatment with ordinary sprays, but after the parts became normal, he was still conscious of the obstruction to respiration. He again sought advice, insisting that there was something in the larynx. By depressing the tongue and causing retching, his physician discovered the upper portion of what he took to be a growth upon, or hypertrophy of the epiglottis, and advised him to consult a special surgeon at once.

At my request, Mr. C. prepared a detailed history of his case from which I take the following extract, in view of the interest attaching to the symptomatology of this class of growth: Prior to the discovery of the obstruction, "changes in the voice in preaching would occur in the same day, and sometimes in the same sermon. Sometimes the voice would be heavy and harsh in the morning, and difficult to control, and at night more flexible and easier to manage; or *vice versa*. Now it is disposed to be smothered, and I cannot with any comfort sing. This is its condition all the time. It was only when the growth began to impinge upon the epiglottis that the choking began. There is no soreness. I cannot lie on my left side and sleep. If I turn into this position at night I cannot get my breath. The growth seems much larger at some times than at others. Extreme cold or heat affect it. I cannot have comfort in a crowded, warm place. A temperature of about 50° F. seems to suit it best. Deglutition of dry food is impossible; it seems to adhere to the surface of the growth and stop the passage of air to the lungs. Speaking does not appear to injure it, but, on the contrary, it sometimes gives less annoyance after preaching than before, especially if the temperature of the room is not too high. It feels as hard as a piece of tender beef, but not larger than it did six months ago. Astringents seem to cause it to swell up instantly. Several times before I knew what it was, muriated tincture of iron was applied as far down as possi-

¹ The growth was presented before the Medico-Chirurgical Faculty at its meeting in 1885 (*vide Transactions*).

ble with the effect of stopping my breath. Recently, any violent exercise, which rapidly increases respiration, causes the growth to swell. The same is true of any nervous excitement."

Examination of the throat was rendered difficult by the large size of the patient's tongue, which, when protruded, occupied almost entirely the buccal cavity and prevented the satisfactory introduction of the laryngeal mirror. Laryngoscopy was therefore undertaken with the tongue depressed, as much as possible, by means of a spatula. Only the right half of the larynx could be seen, the left being covered by a large smooth, globular, bright-red mass which extended from a point a little to the left of the median line to the right lateral wall of the pharynx, filling the corresponding pyriform sinus, from which cavity it apparently sprang. The growth was distinctly movable both on manipulation and phonation. It could just be reached with the finger and communicated to the touch the sensation of a soft elastic, semi-solid body, with here and there small areas of a harder substance. By exciting retching, the upper surface of the tumor appeared above the upper edge of the epiglottis.

On May 5, I operated as follows: Having provoked retching, the growth was caught with a pair of laryngeal forceps in its ascent and drawn as far upward as possible toward the base of the tongue. The handles of the forceps were then entrusted to my friend, Dr. S. Johnston, who was kindly present, and upon the forceps as a guide, the strong silver wire of an *écraseur* was threaded and carried to the base of the growth, which was then rapidly severed, the whole operation taking only two or three moments. The patient expectorated no blood after the extirpation of the growth.

Laryngoscopic examination immediately after the operation discovered in the centre of the floor of the right pyriform sinus a small raw, slightly bleeding surface which marked the site of the tumor's base. The patient thought that, during the night, some hæmorrhage took place from the wound, the blood entering the stomach, but on the following morning, a firmly organized clot occupied the seat of operation and the patient was allowed to return to his home in Virginia.

The growth was about the size and shape of a testis, was soft and elastic to the touch and gave a distinct sense of fluctuation. On section, it appeared to be made up of a soft elastic tissue in which innumerable tolerably hard whitish points were seen. Microscopical examination undertaken by Professor Councilman, of the Johns Hopkins University, disclosed the following: The growth was covered over with epidermis which showed in several places slightly rough elevations. Under the microscope, were found "externally, well-formed mucous epithelium, while the body of the tumor was composed of areolar connective tissue in which there were small areas of small cells

similar to the lymphoid corpuscles. Immediately beneath the epidermis, this lymphoid tissue was most abundant. There was no glandular tissue in the growth nor any glands opening on its surface. The small cell areas could well belong to the follicular tissue so common in the pharynx."

In other words, the tumor was composed of the lymphoid pharynx tissue so graphically described in recent years by Waldeyer and his pupils, and I have therefore used the term "lymphoid" as best expressive of its true nature.

The origin of the growth was doubtless due to some form of local irritation—possibly in the case before us to a neglected localized inflammation of the pyriform sinus.

Outgrowths, generally fibrous in nature, are occasionally met with in the glosso-epiglottic fossæ, or projecting from the tonsils and lateral pharyngeal walls, but primary growths of the pyriform sinus are excessively rare. As the above case is probably unique, I have thought it worthy of record.

Over four years have elapsed since the removal of the growth without any signs of its recurrence.

DR. J. SOLIS-COHEN remarked that it was rather curious that this unique growth originated in the position from which some few cases of lipoma had taken origin.

IMPAIRED VISION AS THE RESULT OF SUNSTROKE.

Read in the Section of Ophthalmology at the Fortieth Annual Meeting of the American Medical Association, Newport, R. I., June, 1889.

BY A. R. BAKER, M.D.,
OF CLEVELAND, O.

My attention was called to this subject a few years since by the commissioner of pensions, who referred a number of cases to me for expert examination for alleged impaired vision as the result of sunstroke while in the service. Upon referring to works upon the eye and special articles treating the subject of sunstroke, I found little of value bearing upon this point. Most articles discussing the etiology of atrophy of the optic nerve mentioned sunstroke as one of the causes; and treats upon the sequela of sunstroke mentioned blindness as one of them. But as to any information as to the frequency of atrophy of the optic nerve as the result of sunstroke, or as to the pathological conditions, the symptoms, diagnosis or treatment, these works make no mention; and the only report of cases that proved of any value in my researches was that of Dr. Hotz, in a paper entitled "Notes of Intra-ocular Lesions Produced by Sunstroke" (*American Journal of Medical Sciences*, July, 1879). In this paper Dr. Hotz reported a number of cases in which an ophthalmoscopic examination shortly after the sunstroke revealed an optic neuritis. In

none of these cases was the swelling of the optic nerve excessive, and all recovered with vision little, if any, impaired, and a very slight, if any, atrophy. In the *Medical Record* of April 28, 1888, there appeared a paper by Dr. Thos. A. Spaulding, of Portland, Me., on the subject, a part of which was read at the preceding meeting of the American Ophthalmological Society. In this paper it is stated that "no member present had ever heard of the sight being affected by sunstroke." As this statement appeared to be somewhat remarkable I addressed letters to a number of physicians who, owing to long experience in military and civil practice, I thought would have met such cases; but all the physicians to whom I addressed these letters answered that they had never met a case of blindness or impaired vision as the result of sunstroke.

Among 13 cases referred to me for expert examination with impaired vision, alleged as the result of sunstroke, I met three cases of simple hypermetropia, two of senile cataract, one of progressive myopia, one of detachment of the retina, and one of disseminated choroiditis, probably of syphilitic origin. Judging from these cases, and from the almost entire absence of references to this subject in medical literature, I am not surprised that many observers are inclined to doubt the existence of impaired vision as the result of insolation. I wish to put on record the following cases, which, to my mind at least, present conclusive evidence that vision is sometimes impaired as the result of sunstroke; and it is to be hoped that in the future the fundus of the eye will be carefully examined in all recent cases so that the frequency of optic neuritis as the result of this cause may be determined.

Case 1.—Mr. H. M., aged 39, examined April 25, 1887. Had sunstroke while in the service July, 1864. Has had neuralgia and pain in the head almost continuously ever since; this is especially severe when exposed to heat. He followed his usual occupation as a miner for some years after returning from the army, but gradually became unfit for work and now has partial paralysis of upper extremities. He has complained of impaired vision ever since he came out of the army, his sight being poor especially at night. Never associated the loss of sight with sunstroke. No other cause for neuralgia, paralysis, loss of sight and other nervous affections can be discovered. Partial white atrophy of optic disc; field of vision very much contracted; vision, left eye, $\frac{2}{30}$ (Snellen); right eye, $\frac{2}{40}$; refraction normal. A record taken five years previously showed no appreciable change in his field of vision.

Case 2.—Mr. A. J. W., farmer, aged 65; examined August 1, 1887. Had sunstroke in June, 1864. Has suffered from constant headache confined to right side of head. This side of the head is always more or less tender on pressure. Mind

not very clear; prematurely old: slight paralysis of left side of body; dragging of left foot in walking; cannot bear heat of sun; always carries an umbrella when sun shines. Has fallen to the ground frequently during hot weather, and only resuscitated by cold water affusions. Complete white atrophy of outer half of optic disc of left eye, and inner half of right optic disc; left lateral hæminopsia; vision, left eye, $\frac{1}{100}$; right eye, $\frac{2}{100}$ (Snellen). I examined the eyes with the ophthalmoscope before taking field of vision, and was able to say, from the atrophic condition of the outer half of one optic disc and the inner half of the other, that the patient was suffering from hæminopsia.

Case 3.—Mr. J. T., aged 45; examined November 5, 1888. Had sunstroke in summer of 1864. Has been a constant sufferer from neuralgia, photophobia and other nervous affections since date of sunstroke. Has never been able to engage in any business or occupation. Does not venture outside of the house on days when the sun is shining. He requires the same constant care and attention as a child six or eight years of age. There is complete white atrophy of the optic nerve of left eye. Veins are large and arteries very small. The blood-vessels about the disc are very tortuous, showing previous intense neuritis. Partial white atrophy of right optic disc. Blood-vessels somewhat tortuous, but not so much so as in the other eye. Vision left eye, slight perception of light; right eye, $\frac{2}{50}$ (Snellen).

Case 4.—Dr. T., aged 57; examined April 15, 1889. In June, 1863, while in charge of a picket line as medical officer, he became insensible from sunstroke. He was totally blind for three days. His sight gradually returned, but with the field of vision extremely limited. He describes it as looking through two small gimlet holes. The brightest day appears to him as mere twilight, and at night he is almost completely blind. He has lost all color perception. Although he has had to avoid walking on the streets on hot days, and his general health has not been robust, he has proven himself a man of indomitable will, and, notwithstanding his impaired vision, he has been a successful practitioner of medicine, and still continues to do an office practice. He has white atrophy of both optic nerves of such a high degree that it seems remarkable that he can see at all. The field of vision is only about two inches in diameter at a distance of 12 inches. Vision right eye, $\frac{1}{100}$, with 2 D. C. axis $90^{\circ}=\frac{2}{60}$ (Snellen); vision left eye, $\frac{2}{100}$, with 2 D. C. axis $90^{\circ}=\frac{2}{100}$.

In addition to these cases, all of which occurred in old soldiers, I wish to report the following case, which very closely resembles those reported by Dr. Hotz:

Mr. H. B., aged 45, merchant. Had sunstroke on July 4, 1886. First examined on August 5th

of the same year. Patient suffering from headache, dizziness, nausea, occasional diplopia and dimness of sight. Ophthalmoscopic examination revealed an optic neuritis of both eyes; outlines of the disc could not be distinguished. Veins large, arteries small. Vision, right eye, $\frac{2}{10}$; left eye, $\frac{2}{10}$ (Snellen). Refraction normal. Have had the case under observation most of the time since the above date. At present there is no appreciable atrophy of optic nerve. There is a slight tortuosity of blood-vessels. Vision $\frac{2}{10}$ in either eye. Health good. No nervous disturbances except that the patient seems to be afraid that there is something serious going to happen, and makes the life of his medical adviser a burden by constant inquiries after this or that insignificant symptom.

In view of these cases, notwithstanding the fact that out of thirteen cases of alleged impaired vision as the result of sunstroke nine were found to be suffering from affections that could have no possible connection with this cause, I am led to believe that impaired vision does result from sunstroke in a large number of cases. We would expect this from an affection which produces such a profound impression upon the cerebral centres.

It is not necessary for me, before such an audience as this, to enter into a detailed account of the intimate relation existing between the optic nerve and the brain and its meninges. I wish simply to emphasize the importance of making an ophthalmoscopic examination of the *fundus oculi* in all cases of *coup de soleil*. This examination should be made immediately after the attack, at a somewhat more remote period, and in all cases where there is alleged impaired vision as the result of sunstroke, no matter if it be at a period many years afterward.

RELAXATION AND MANAGEMENT OF THE PERINEUM DURING PARTURITION.

Read before the Golden Belt District Medical Society of Kansas, July 4, 1889.

BY WILLIAM B. DEWEES, A.M., M.D.,
OF SALINA, KAN.

Mr. President and Fellows of the Golden Belt District Medical Society of Kansas:—In performing the duty assigned me on this occasion, I have chosen to briefly consider the *relaxation and management of the perineum during parturition*.

Great rigidity of the tissues at the pelvic outlet, as a cause of lacerations and other serious complications in labor, is—as we are all fully aware—an old topic, and almost worn threadbare from discussions *pro* and *con* as how the better to overcome this abnormal condition; nevertheless the little triangular, pyramidal or wedge-like body, known

as the perineum, often meets with a serious lesion, occurring as an accident to parturition.

Believing that immunity from perineal injuries is due to a better knowledge of preventive means, we offer no apology in presenting the subject for your consideration.

Prof. H. Lenox Hodge,¹ writing on this subject, says: "There are few complications which demand the more sedulous attention, and the best exercise of the judgment and skill of the accoucheur."

Prof. Wm. P. Dewees² observes: "There is no more frequent complication of labor, or one more productive of dangerous consequences to the mother and child."

The very great variety of opinion, by those who write and teach, as to the best mode of caring for the perineum, sets forth the necessity for a closer study and fuller discussions of the subject. One of the most delicate as well as most responsible tasks which devolve upon the accoucheur is the regulation of the exit of the child's head and consequent management of the mother's perineum. He who preserves the integrity of a perineum which is in peril, shows more skill and consummates higher art than he who successfully repairs a perineum which has been *torn*.

The method of universal success has not been found, nor can it be confidently hoped for. However, better methods with better results may be expected. Under any method of management yet devised, injury occurs in a considerable number of cases. The history of accidental parturient wounds of the perineum proves that they occur in the experience of every practitioner of obstetrics, however skilful he may be. But, it cannot be denied that they occur most frequently in the hands of the unskilful; that a large percentage of such cases are avoidable, and that many others, by prompt and well directed assistance, may be limited in their extent.

The question of the proper management of the perineum during labor is no longer dwelt upon in our schools as formerly; indeed, in some it is not taught at all, the direction being "if the head be delayed, place the forceps, and pull it through; a few stitches will make it all right." How different this, from the instructions imparted in my *Alma Mater*;³ how well do I remember that venerable teacher, Prof. R. A. F. Penrose, folding a napkin to a soft smooth surface, and placing it upon the distended perineum of a manikin, assuming a position to support against the advancing head. "Gentlemen," said he, his face reflecting the conscious responsibility and anxious interest which should be felt by every one who assumes to aid the physiological act of parturition, at the moment when the future happiness and

¹ Hodges' System of Obstetrics, p. 423.

² Dewees' System of Midwifery, p. 358.

³ University of Pennsylvania, Med. Dept., at Philadelphia.

comfort of a suffering woman is depending upon a tear, or no tear, "how long should you hold your position here?" "I answer one hour, two or three hours if needed, until this head is extruded and this perineum saved." "Remember the law; every perineum will properly distend if time be given to prevent rupture."

This early imbued attention to the perineum has saved many a one under my care. But in the light of our present knowledge it may be carried too far. The question of "how long shall we wait?" takes a new point of consideration. The condition of the child and mother come earlier into account.

From great rigidity of the perineum and adjacent soft parts, and strong, violent contractions of the uterus, there has occurred:

1. Death of the child.⁴
2. Rupture of the uterus and death of the mother.⁵
3. Laceration of the perineum and sphincter ani.⁶
4. *Convulsions and violent spasms*, from prolonged pressure of the foetal head on the obturator nerves and sacro-sciatic plexuses. Such irritations being propagated to the spinal marrow and brain, disturbing their functions; hence these excitations.⁷

5. *Inflammation and mortification*, which has sometimes proved fatal; and in other cases, though the mother recovered, she has been subject to an involuntary discharge of fæces and urine through the vagina.⁸

6. *Atony of the uterus*; the contractions being thus insufficient to expel the fœtus, even though the rigid soft parts should then become relaxed.⁹ Delivery being now accomplished with the forceps, yet the injury does not end here; from inability of the uterus to contract, an hæmorrhage supervenes, which is generally fatal to the mother.¹⁰

And when we add to these, the risk of rupture of the blood-vessels;¹¹ fatal congestions of brain and spinal marrow, also in the viscera of the chest and abdomen;¹² death from exhaustion of vital power or, according to Dr. Churchill, of the "nervous shock."¹³ While, even when every precaution is taken, there are cases in which extreme smallness of the vulva, and rigidity of the soft parts, with a disproportionately large foetal head, make it impossible for the head to be expelled without greater or less rupture of the perineum.¹⁴

⁴ Hodge's Obstet., p. 420; Case No 4 of this paper; Playfair's System of Midwifery, p. 349.

⁵ Foster's Midwifery, p. 246; Dewees' Baudelocque's Midwifery, p. 555; Hodge's Obstetrics, pp. 423, 452.

⁶ Dease's Midwifery, p. 36; Deuman's Midwifery, Vol. i, pp. 68, 383; Foster's Midwifery, p. 246; Cazeaux's Midwifery, p. 680; Hodge's Obstet., p. 422.

⁷ Hodge's Obstet., pp. 421, 423; Denman's Midwifery, Vol. ii, p. 403.

⁸ Clark's Practical Essays, p. 68; Dease's Midwifery, pp. 38, 75; Hodge's Ob., p. 421.

⁹ Cazeaux's Midwifery, p. 679; Hodge's Obstet., 421; Playfair's System of Midwifery, p. 350.

¹⁰ Hamilton's Cases, order 2, c. 1; Dr. Braxton Hicks, Obstet. Trans., Vol. ix.

All of which have happened, and may again happen under similar circumstances. We cannot suppose that any great advantage can be derived from "waiting patiently for the efforts of nature," in complicated and protracted cases.

Having pointed out some of the evil consequences arising from a rigid state of the perineum and adjacent soft parts, we proceed to the consideration of the means by which to relax and give distensibility to these tissues, that they may sufficiently dilate in due time, and these evils be remedied. We shall notice:

First.—Some of the various methods as practiced and recommended by those who write and teach on this subject.

Second.—The means which a diligent and earnest endeavor to relieve the suffering incident to rigidity of the perineum and adjacent soft parts, by an impartial and unprejudiced examination of facts, and the dictates of reason; it has been my privilege to witness the beneficial results of the intelligent application thereof, at the bedside of suffering woman.

The practice of caring for the perineum has been in vogue since the days of Avicenna, almost 1,000 years. The various methods taught and practiced, as found in the literature on this subject, we shall endeavor to give in a brief *résumé*. The former plan recommended, according to Galabin,¹⁵ was to press with the palm of the hand upon the perineum, when stretched over the advancing head, and so check that advance."

Baudelocque¹⁶ firmly supported with the palm of the hand during a pain, and attempted forcible dilatation of the vulvar outlet during the interval.

Velpeau¹⁷ advises the hands so placed that the radial side of the forefinger is in relation with the fourchette.

Ramsbotham,¹⁸ resting his elbow upon the head, placed his hand against the perineum.

Depaul¹⁹ places two fingers of the left hand on that portion of the child's head corresponding with the anterior commissure of the vulva, and two fingers of the right hand over that portion which corresponds with the posterior commissure, and thus counterbalances the effect of the uterine contractions.

Collins²⁰ applies the palm of the hand direct to the perineum during pain, with a soft cloth intervening. This plan was adopted by Meigs and Penrose, of Philadelphia, Pa. Glisan²¹ teaches the same plan without the cloth.

Chailly²² placed the patient on her back and

¹¹ Ibid., Vol. ii, p. 50.

¹² Hodge's Obstet., p. 421.

¹³ Playfair's Midwifery, p. 350.

¹⁴ Cazeaux. Midwifery, p. 678; Playfair's Midwifery, p. 288.

¹⁵ Trans. State Med. Soc. W. Virginia, p. 447.

¹⁶ Dewees' Baudelocque's Midwifery, 1823, p. 217.

¹⁷ Manual of Midwifery, 1831, p. 348.

¹⁸ System of Obstetrics, p. 151.

¹⁹ Trans. Med. Soc. of W. Virginia, 1887, p. 447.

²⁰ Treatise on Midwifery, 1841, p. 10.

²¹ Text-book of Modern Midwifery, 1881, p. 397.

²² System of Obstetrics, 1884, p. 210.

passed his right arm under her right thigh, and pressed his palm on the perineum, with the radial border of the index finger upon the outer border of the perineum, and the thumb extended on the right thigh. He at the same time placed his left arm over the thigh, with the fingers upon the vertex, for retardation and support. This is called the *Vienna* method.

Schröder²³ directs pressure upon the head, through the perineum, with the ball of the thumb or the fingers, for both support and retardation.

Lusk²⁴ gives direct pressure with the flat hand to the perineum in cases where central perforation seems imminent, and where there is defective elasticity he passes the left hand between the thighs and presses the head forward and inward, at the same time preventing undue extension by pressing backward through the perineum with the disengaged hand.

Niemeyer²⁵ advises pressure on the perineum in the direction of the axis of the inferior strait; more, however, with a view to extension of the head than of direct support.

Cazeaux,²⁶ in the former edition, says: "Press the whole perineal surface equally, and with a moderate degree of force, by the palmar face of the hand." But in the last (seventh) edition²⁷ the views of Goodell are recommended, both by Tarnier and Hess, the American editor.

Goodell²⁸ holds the head back by placing his thumb against the occiput, while drawing forward the perineum by hooking one or more fingers in the rectum.

Hodge²⁹ placed the finger over the posterior commissure of the vulva, so as to give it a firm support; at the same time the fingers of the other hand, upon the occiput, may prevent any sudden exit of the head.

W. Tyler Smith³⁰ advised holding back the head with one hand, with the other making the degree of distension.

McGaughey³¹ supports the perineum by placing the right hand with palm on the centre of that body, with the fourchette between the thumb and forefinger, while the left hand is placed over the thigh, with its palm upon the head and the fingers touching the anterior thinned edge of the perineum, to hold back the head and at the same time to direct it forward.

W. A. Duncan³² simply applies pressure to the advancing head, with the fingers in the shape of a cone.

Hohl³³ grasps the occiput with the hand, the

thumb above and the fingers below, thus holding back the head during a pain.

Garrigues³⁴ makes moderate pressure with the flat hand, so that the fold between the thumb and finger rests upon the posterior commissure.

Robert Barnes³⁵ applies the palm of the hand, so spread out as to rest upon the coccyx behind, and upon the pelvic floor, at the same time pushing up the skin from adjacent parts toward the fourchette.

Playfair³⁶ says: "If, when the head is distending the perineum greatly, the thumb and forefinger of the right hand are placed along its sides, it can be pushed gently forward over the head at the height of the pain, while the tips of the fingers may at the same time press upon the advancing vertex, so as to retard its progress if advisable." He thus aims with a view to relaxation rather than support.

Gardner³⁷ follows the same method as Playfair, but with a view to support, not relaxation.

Fasbender³⁸ places the patient on her left side, then standing behind her, seizes the head, the index and middle fingers applied to the occiput and the thumb in the rectum. He is thus enabled to control the head during a pain. Between the pains, he claims, the head can be pressed forward with the thumb, at the will of the operator.

Parvin³⁹ advocates applying the concave palm of the right hand to the convexity of the bulged perineum, while the left hand, passed over the right thigh, grasps the head and retards or directs it at will.

Reamy⁴⁰ says: "Place the patient on her back across the bed, with her nates brought to its verge; the thighs are flexed upon the abdomen, and the legs upon the thighs, with the knees close together. The limbs are held in this position by two assistants, one on each side sitting on the edge of the bed, with their backs toward the patient's head, who are given opposite ends of a towel or bandage of linen, about 10 inches wide and 40 or 50 inches long, which is carried around the buttocks spread out smoothly, with its anterior or upper edge on a level with the fourchette. They are then instructed to make traction, during the pains, in such amount, in such directions, and with such part of the bandage as the accoucheur may direct."

Englemann⁴¹ advocates the semi-recumbent position in labor as the best in ordinary cases, and thinks that in this position there is a certain amount of support, which does away with the old method, which he thinks usually does more harm than good.

²³ Manual of Midwifery, 1878, p. 93.

²⁴ New York Med. Jour., 1880, Vol. xxxii, p. 595.

²⁵ Brit. Med. Jour., 1861.

²⁶ Theoretical and Practical Midwifery, 1871, p. 678.

²⁷ Theory and Practice of Obstetrics, 1884, p. 680.

²⁸ Am. Jour. Med. Sciences, 1871, p. 55.

²⁹ Prin. and Prac. of Obstet., 1864, p. 192.

³⁰ Lectures on Midwifery, p. 365.

³¹ Am. Jour. Obstet., Vol. xvii, p. 580.

³² London Lancet, 1884, p. 202.

³³ Grundriss der Geburtshilfe.

³⁴ Am. Jour. of Obstetrics, 1880, p. 241.

³⁵ System of Obstetrics, Med. and Surg., p. 431.

³⁶ System of Midwifery, 1884, p. 287.

³⁷ Tyler Smith's Lectures on Midwifery, p. 365.

³⁸ Trans. Med. Soc. of W. Virginia, 1887, p. 447.

³⁹ Trans. Am. Gyn. Soc., 1882, p. 145.

⁴⁰ Paper read before Am. Gyn. Soc., September 23, 1885.

⁴¹ Trans. Med. Soc. W. Virginia, 1887, p. 448.

Dumas⁴² recommends a procedure which he designates "præ-fœtal dilatation of the vulva." It consists in introducing two or more fingers and the thumb of the right hand into the vagina, and fitting the hand on to the head, not exerting any force on the approaching head, but rather allowing it to push the hand in front of it, and thus take the place of a dilator.

Ritgen⁴³ advises introducing two fingers into the rectum, and pushing the fœtal head upwards and forwards in the direction of the vaginal orifice. Many other substitutes might be cited for the purpose of "perineal support" and "perineal relaxation" by men eminent in the profession, but I shall spare you the infliction; this sufficing to prove,

First: That the practice of caring for the perineum has been entertained by the leading obstetricians for almost ten centuries.

Second: That tearing of the perineum has been likewise recognized, as an abnormal concomitant to labor—hence the scientific attention for guarding this body.

In summarizing the methods practiced we find that they are of three distinct classes, viz.:

First: Perineal support.

Second: Perineal relaxation.

Third: Perineal abstaining.

The first class, or those who direct their attention with a view of "supporting the perineum," may be divided as follows: 1. Methods which aim at protection chiefly by applying direct to the perineum some artificial means of support.

As advocates of this class may be cited Baudelocque, Velpeau, W. P. Dewees, Ramsbotham, Barnes, Cazeaux, Meigs, Penrose, Neimeyer, Tarnier, Hess, Playfair, Collins, Glisau, Gardener, Gooch, Garrigues, Reamy and Opie.⁴⁴

2. Methods which aim at protection by endeavoring to retard the rapid descent of the head, and at the same time afford direct support to the perineum.

As supporters of this class we find Schröder, Lusk, McGaughey, Chailly, Hodge, Parvin, Fashbender.

The second class, or those who direct their attention with a view of "relaxation of the perineum," may be divided as follows:

1. Methods which aim chiefly to prevent the rapid descent of the head by direct pressure upon it, in order to gain time for adequate relaxation of the perineum.

Among this class we find notably, Kohl, W. A. Duncan, W. Tyler Smith, E. Warren Sawyer, Meigs, Penrose, Goodell and Depaul.⁴⁵

2. Methods which aim chiefly to accomplish relaxation by artificial means of forcible dilation of the vulvar and vaginal outlets—with the finger

or otherwise—some at the same time practicing a process of enucleation. As exponents of this class we cite Ahlfeld, Duke, Dumas, Olshausen, Ritgen, Smellie.⁴⁶

3. Episiotomy as a *dernier ressort* in cases of extreme peril.

This practice has found able followers in Sir James Simpson,⁴⁷ Chailly-Honore,⁴⁸ Anna E. Broomal,⁴⁹ Manton,⁵⁰ Madden,⁵¹ Fordyce Barker,⁵² Tyler Smith,⁵³ Cazeaux.⁵⁴

The third class, or those who direct their attention with a view of letting the perineum religiously alone—total perineal abstaining. This practice finds high authority in the writings of Hewitt⁵⁵ and Leishman.⁵⁶

We thus find that by far the greater number of the authorities trust in some method of preservation, and that methods which combine judicious perineal support with simultaneous retardation of the fœtal head meet with most favor. Again, we find, "Naegle, Grenser, Kleinwachter and Matthews Duncan think that the plan by relaxation gives *no better* results than other methods."⁵⁷ Parvin⁵⁸ says "perineal support is not likely to be abandoned, and he does not believe it can be replaced by hip bandages or rectal pressure."

Prof. Dumas⁵⁹ criticises the various methods of supporting the perineum, and comes to the conclusion that none of them are either scientific or satisfactory.

Playfair⁶⁰ says: "Much error may be traced to a misconception of what is required. The term 'supporting the perineum' conveys an unquestionably erroneous idea, and it is certain that no one can prevent laceration by mechanical support. If the term 'relaxation of the perineum' was employed, we should have a far more accurate idea of what should be aimed at; and if this be borne in mind I think it cannot be questioned that nature may be most usefully assisted at this stage."

Grailly Hewitt, Leishman, Goodell and other eminent authorities have with untiring zeal endeavored to show the evil effects likely to follow supporting efforts. They maintain that by pressure exerted in this fashion we not only fail to prevent, but actually favor, laceration, in consequence of the pressure producing increased uterine action just at the time when forcible distension of the perineum is likely to be hurtful. Hence the opinion, notably of Hewitt and Leishman,⁶¹

⁴² Loc. cit.

⁴³ Obstet. Works.

⁴⁴ Traité pratique de l'art des Accouchements, 1867.

⁴⁵ Am. Jour. Obstet., Vol. xi, p. 577.

⁴⁶ Am. Jour. Obstet., March, 1885.

⁴⁷ Am. Jour. Obstet., 1872.

⁴⁸ Puerperal Diseases.

⁴⁹ Loc. cit.

⁵⁰ Loc. cit.

⁵¹ Brit. Med. Jour., 1860.

⁵² System of Midwifery, 1879, p. 268.

⁵³ Opie's Paper, Trans. Med. Soc. W. Virginia, 1887.

⁵⁴ Loc. cit.

⁵⁵ Loc. cit.

⁵⁶ System of Midwifery, 1884, p. 287.

⁶¹ Loc. cit.

⁴⁰ Montpellier Médicale, 1883.

⁴³ Med. and Surg. Rep., Vol. xlix, p. 245.

⁴⁴ All given—loc. cit.

⁴⁵ Loc. cit.

that the perineum ought to be left entirely alone, and that the head should be allowed to gradually distend it, without any assistance on the part of the practitioner.

The frequency of rupture of the perineum during parturition is variously stated, as is also the opinion of the delivery with forceps as a cause of this injury.

Tyler Smith⁶² says "laceration of the perineum is no uncommon accident."

M. D. Mann⁶³ states, "It is quite common in primiparæ and after forceps."

F. A. Reamy⁶⁴ writes: "Perineal lacerations are far more common than is generally recognized by physicians and patients."

Dr. Tait⁶⁵ reported seventy ruptures in 142 primiparæ.

Prof. Braun's⁶⁶ division of the Vienna General Hospital, in 1,157 primiparous cases, rupture occurred but sixty-eight times.

D. Hayes Agnew⁶⁷ says: "Such accidents doubtless take place, in a large majority of cases, from ignorance or carelessness on the part of the medical attendant, and yet may and do occur in the hands of the most competent and expert practitioners." "It is only in unskilled hands that the forceps can be said to do harm in this way."

Fordyce Barker⁶⁸ says: "The forceps may be a mechanical cause of rupture, and they may be a most efficient means of preventing rupture, especially in that class of cases where injury to the tissues may result from long-continued pressure upon the perineum. The danger in the use of the forceps arises from the fact that they are used as instruments of direct traction instead of instruments to complete a normal process—a physiological delivery of the head." The late Prof. Geo. T. Elliott,⁶⁹ one of the most accomplished of obstetricians, with all his skill, failed to prevent this accident at times. He cites a specimen: "It became necessary to resort to the forceps, and although I used the smallest and lightest in my possession, and all due skill and care, an appalling laceration occurred, splitting the sphincter ani and the vagina throughout its whole length to the bottom of Douglas' cul-de-sac."

Prof. Peaslee⁷⁰ stated in a report: "I then applied Elliott's forceps, the head being high up in the superior strait. While making traction quite forcibly, but very slowly, the blades of the forceps sprung, and their descent cut through the sphincter ani, and about 1½ inch up the rectum."

Prof. Wm. Goodell,⁷¹ speaking of the use of the forceps, says: "There is such an abuse of

this instrument that I sometimes think that Bau-delocque was right when he said that the forceps had done more harm than good. It requires great skill and judgment to end a labor with forceps. A physician from inexperience, or being demoralized by the long and tedious labor, is liable to use undue violence and deliver the head too quickly, or to make traction in the wrong direction. I have myself torn the perineum, and have seen many good physicians do the same. Tears of the perineum will occur whether the physician uses the forceps or not, but in the majority of cases they come from the abuse of the forceps."

Olshausen⁷² reports, as the result of the preventive measures adopted at the clinic in Halle during a period of ten years, 21.1 per cent. of perineal injuries in primiparæ, and 4.7 per cent. in multiparæ. These percentages do not include slight tears confined to the perineum. He regards 15 per cent. not too high an estimate for the absolutely unavoidable lacerations due to defective distensibility of the perineum, and to the disproportionate size of the child's head.

Parvin⁷³ says ruptures occur in from 20 to 30 per cent. of primiparæ, and in from 5 to 10 per cent. of multiparæ.

Schröder⁷⁴ found that lacerations occurred in 37.6 per cent. of cases delivered in the dorsal position, and 24.4 per cent. in other positions. Schröder's statistics are very strong, as showing that ruptures of the perineum are more common when women are delivered upon their back—French position—than when placed upon their left side—English position.

The authorities hold the same general opinion, viz.: that the frequency of these accidental parturient lacerations of the perineum may be lessened from 5 to 10 per cent. with due exercise of care and skill. My own experience warrants the statement that they may be reduced to even a considerable less percentage than this. By practicing the management which I shall hereinafter describe, there occurred fifty-one lacerations of the perineum in 1,000 consecutive cases of parturition, under my care. Of these, twenty-four were slight, twenty-two considerable, and five penetrating deep into and almost entirely through the sphincter ani.⁷⁵

This gives 5.01 per cent. of all cases—primiparæ and multiparæ combined.

(To be concluded.)

⁶² Am. Jour. Med. Sciences.—Goodell.

⁶³ Trans. Am. Gyn. Soc., 1882.

⁶⁴ Loc. cit.

⁶⁵ This does not include slight tears confined to the fourchette. It should also be remembered that women of good development, and laborious exercise, constituted the greater portion of my cases, my practice being confined to a farming community—in town and country. There occurred 226 cases of well-defined rigidity among these 1,000 cases.

⁶⁶ Loc. cit.

⁶⁷ Loc. cit.

⁶⁸ Loc. cit.

⁶⁹ Trans. Cin. Acad. of Medicine.

⁷⁰ Trans. Cin. Acad. of Medicine.

⁷¹ Lacerations of Female Perineum.

⁷² Puerperal Diseases.

⁷³ Am. Jour. of Obstet.

⁷⁴ Trans. New York Obstet. Soc.

⁷⁵ Med. and Surg. Reporter, Vol. 1, p. 741.

THE CLINIC.

REGULAR SURGICAL CLINIC AT RUSH
MEDICAL COLLEGE, CHICAGO,
OCTOBER 15, 1889.

BY CHARLES T. PARKES, M.D.,
PROFESSOR OF SURGERY.

[Reported for THE JOURNAL.]

Case 1.—Mrs. H., Chicago, age 44, American, housewife.

Gentlemen:—This patient you will recognize as the one upon whom we performed vaginal hysterectomy, three weeks ago, for cervical carcinoma. She is perfectly well and desires to leave the hospital.

You will remember that the broad ligaments before division were secured by means of two pair of long-jawed forceps, for the purpose of preventing hæmorrhage, and no ligatures were used; and you will also remember that very little blood was lost at the time of the operation. The operation was finished at 2:30 P.M.; the patient was returned to the hospital and put to bed. She rested very comfortably until about 8 P.M., when she was seized with severe vomiting, and this was followed by profuse hæmorrhage from the vagina. I saw her within a few moments after its occurrence, exposed the parts and ascertained the cause of the hæmorrhage to be from the slipping of a part of the tissues grasped in the forceps placed upon the left broad ligament, which undoubtedly let free the uterine artery. The cause of this accident was the succussion of the vomiting secondarily; primarily it was rendered liable for the following reasons, viz: The use of the strong-jawed forceps is followed by a slough of all the tissues included in their grasp. This slough is slow in separating, gives rise to rather a foul discharge, and is accompanied with some danger of infection. With the intention of avoiding these conditions I attempted to apply this pair of forceps more loosely than heretofore. My idea was to make just enough pressure to control the bleeding, and not enough to kill the tissues included in the grasp of the forceps; hence I fastened it only by the first catch instead of shutting the handles down to the third notch. This controlled the hæmorrhage, but as soon as the straining of the vomiting came on the tissues pulled out of the grasp of the forceps and bleeding occurred immediately. Without anaesthetizing the patient an attempt was made to seize the bleeding vessels with other forceps, and believing that I had been successful I left the patient. Within half an hour I was informed that the bleeding had recurred as badly as ever. The patient was now anaesthetized and the parts thoroughly exposed, but no bleeding artery could be found. The entire surface and cavity were now thor-

oughly packed with strips of iodoform gauze and bleeding did not recur. The forceps were all removed at the end of forty-eight hours. The packing was gradually removed from day to day. The patient went as rapidly to recovery as if the hæmorrhage had not taken place. All things considered, it is perhaps the best plan to clasp the forceps as tightly as possible. Excessive hæmorrhage does not always retard the recovery of patients, although it should be the rule to use every precaution to prevent its occurrence.

Case 2.—Mrs. G., Baraboo, Wis., age 28, American, housewife. This patient, whose family history and previous history are good, has suffered for six months from some abdominal trouble. Inspection of the abdomen shows a decided bulging below the line of the umbilicus. Palpation determines the presence of a hard movable mass about the size of a coconut in the left lumbar and umbilical regions. Fluctuation is easily recognized. Below this mass, entirely across the body, percussion gives flatness everywhere except in the upper zone of the abdomen. Vaginal examination elicits the fact that the uterus is of normal size, retroverted and probably free from the mass above.

Diagnosis: Multilocular ovarian cyst, for the removal of which we will do a laparotomy. An incision 4 inches long is made in the median line through the abdominal walls between the umbilicus and the pubis. This incision should always reach near to the pubis, so that when the tumor is delivered the pedicle can be easily handled and managed. It should be made quickly through the tissues of the abdominal walls down to the transversalis fascia without the use of a director, the eye recognizing the different tissues as divided. A good guide for the place of the incision is the dark line to be recognized in the skin between the umbilicus and the pubis directly over the course of the linea alba.

When the transversalis fascia is exposed it should be seized with a pair of dissecting forceps in the hand of your assistant and another pair in your own hand at points one-half inch from each other, and be lifted up from the subjacent tissues and then freely divided with the knife. This will expose the peritoneum, which should be seized in the same manner and also lifted away from subjacent tissues and freely incised. This can be done with safety and without fear of injuring the sac, or intestine, or omentum, or whatever else may be beneath it. Now, while talking to you these steps have all been taken and here is an opening in the peritoneum, out of which flows a little peritoneal fluid, warning us of the fact that the peritoneal cavity has been reached. Through this opening I can see the white glistening surface of an ovarian cyst; and this is the sight which always gladdens the heart of the operator, for when he sees this white glistening

tissue he knows that he has an ovarian cyst to deal with. The diagnosis is confirmed, as all other outgrowths of the uterus and its appendages are reddish in color. The opening in the peritoneum is now enlarged to the full extent of the opening through the abdominal walls by means of the scissors, using the fingers in the abdominal cavity as a guide to avoid wounding the intestines, or omentum, or bladder, should they be in the way. The cyst wall now comes up freely in the wound, so that it can be seen in all parts of the room. Some authorities advise, and many operators practice at this stage of the operation, the plan of introducing a sound or the hand into the abdominal cavity and over the surface of the tumor for the purpose of ascertaining and locating adhesions. I do not think it a good plan and never practice it. No attempt to separate adhesions should be made until they can be seen and are under perfect control, and this can be better done after the sac is emptied and its surface, with the adhesions, is drawn to the opening in the abdominal wall. The tumor is now held firmly against the abdominal opening by pressure from the assistant's hands from above and behind, which is kept up until the sac is entirely emptied. In this way the sac is kept in close contact with the edges of the wound, filling it entirely, so that no leakages of the contents of the sac can find their way back into the abdominal cavity. A large trochar, to which a rubber tube is attached, is plunged into the sac and the contents allowed to flow into a proper receptacle. Allow the contents to flow out slowly. As the tension of the sac wall diminishes, pressure from behind brings it through the wound, so that it can easily be seized with a pair of Neleton forceps and drawn out through the opening. As more and more of the sac comes out, there come into view different adhesions. Here, for instance, is a fold of omentum firmly adherent to the sac wall. It is secured by transfixion with a needle armed with a double ligature and tied in two sections; the ends of the ligatures are cut short. The omentum is cut through close to the tumor with the scissors. The cut surface is carefully examined to ascertain that the vessels are perfectly secured. If found satisfactory the stump is dropped into the abdominal cavity; if not, it is tied again. A sponge is placed under the omentum before division, to prevent any blood from entering the peritoneal cavity. Soft and recent adhesions are pressed off the surface of the tumor by means of a sponge. Vascular and old adhesions should always be ligated in two places and cut between them. And now, by a rather free pull, I have succeeded in forcing through the abdominal wound the large mass which was felt through the abdominal wall, and I find it to be an aggregation of multitudes of small cysts, rather unusual in its situation in being at the top of the

tumor. Usually such accumulations are found near the pelvic portion of the tumor. The entire mass is now delivered, bringing the pedicle in plain view. It is made up of the expanded broad ligament and the Fallopian tube, much enlarged, running along its free margin over the surface of the tumor, and here we meet with a complication which must be handled with great care. A fold of the small intestine is firmly adherent for a distance of 2 inches along the edge of the pedicle. The tissues of the broad ligament, one-half inch away from the surface of the intestine, is transfixed with a needle armed with a double ligature, tied in halves, and the intestine cut away from its adhesion. The pedicle is now grasped in these long forceps and the tumor cut away.

The next point is to secure the pedicle. It is transfixed through its middle, selecting a non-vascular point, with a rather blunt needle armed with a double ligature of strong silk. The needle is detached, the threads are crossed, drawn around the halves of the pedicle and tied tightly, always removing the forceps before the knot is fastened, to be sure that the vessels are controlled by the ligatures. If all is satisfactory, the ends of the ligatures are cut short and the pedicle is dropped into the abdominal cavity, remembering never to pull upon the ends of the ligatures after they are tied, for fear of loosening their hold.

Now the abdominal cavity is to be cleansed thoroughly of blood and anything else that may have collected. The intestines are held out of the cul-de-sac of Douglas. These small sponges, fastened to handles, are used to remove thoroughly any discharge that may have gravitated into it. We are now ready to close the abdominal wound as soon as the omentum is pulled down over the surface of the intestines. A large flat sponge is introduced into the abdominal wound to protect the intestines and catch the blood coming from the needle punctures. The sutures for closing the abdominal wound are passed through the skin about one-half inch from the edge of the wound and include all the tissues of the abdomen together with the peritoneum. About three sutures for every inch in length of the wound are introduced in this manner. Now a very important duty, and one never to be neglected, is to be performed, and that is to account for all the sponges that have been used during the operation. The flat sponge is now removed and all the sutures tied, being sure to perfectly approximate the edges of the skin, so as to provide for early and secure healing and thus avoid, as far as possible, the dangers of the occurrence of ventral hernia. The wound is dressed dry with iodoform, iodoform gauze, borated cotton and a firm abdominal bandage. The patient is put into a bed warmed with bottles of hot water, the limbs are flexed over a pillow, and the shoulders are raised to relax the abdominal walls. The arti-

ficial heat is kept about the patient until reaction is fully established. No medicine of any kind is administered unless opium is required to relieve severe pain. I think this is best done by rectal injections of 30 drops of deodorized tincture as often as is necessary to control the pain. No food whatever is given for twenty-four hours. If vomiting is present, it is usually readily controlled by giving teaspoonfuls of very hot water. The bowels are moved on the third or fourth day by giving teaspoonful doses of epsom salts every four hours until the result is obtained.

Unless the temperature rises to 102° F., accompanied with other symptoms of trouble, the patient will not be disturbed in any way except as mentioned until the seventh day, when she will be brought before you and the stitches removed.

About the only preparation I make of my patients—and it is absolute with me—is to have the patient quiet for three days before the operation, on liquid diet, and to have the bowels thoroughly and effectually emptied of their contents by proper cathartic medicines. Twenty-four hours before the operation the patient has a general bath and a large $\frac{1}{1000}$ corrosive sublimate douche, followed by a large hot water douche to disinfect the vagina. The abdomen is thoroughly scrubbed and shaved, and an antiseptic dressing is applied, which is left on until the time of the operation. Five grains of quinine with one-fourth grain of morphia are given by mouth one-half hour before operation.

Without accident this lady will not be confined to her bed more than three weeks, and if all goes well she will be able to return to her home by the end of this time. A peer of the English government, during the ceremonies incidental to the laying of the corner-stone of a hospital, a few years ago, made the statement that Sir Spencer Welis had added 20,000 years to women's lives by the performance of such operations.

Notwithstanding the fact that the great majority of patients subjected to laparotomy for ovarian cysts when properly cared for, recover, still when asked if there is any danger attending the operation, be honest enough to say that there is danger.¹

Case 3.—Miss E. A., Chicago, age 32, American, musician, general health good. This patient presents herself to us with a small painful tumor as large as a bean, on the back of the hand, between the second and third metacarpal bones. It has developed within the last six months, after prolonged piano practice.

It is a neuroma, and requires removal. The lady bravely consents thereto without taking an anæsthetic. It is exposed by a short incision directly over it, picked up with a pair of forceps and dissected away. Two catgut sutures, iodo-

form, iodoform gauze and borated cotton dressing complete the operation.²

Case 4.—J. C. H., Stonington, Ill., age 48, American, farmer. Family history good, patient well until he entered army at age of 20. This patient has had slowly but constantly increasing symptoms of locomotor ataxia, probably caused by exposure during three years' service in the war.

But he appears before us to-day for relief from disabling disease of the right knee-joint, which you can plainly see is very much enlarged and misshapen. Fourteen months ago he first noticed an unusual snapping and grinding in the knee during motion. There came on swelling of the knee and of the leg below as far as the ankle. The swelling of the leg gradually subsided, but the knee remained swollen and its distortion gradually increased, until now an examination shows it to be completely disorganized, movable in all directions, the ligaments apparently destroyed and every motion made in it accompanied with harsh, rough grating. It is also filled with fluid, which upon aspiration is shown to be reddish serum. He has had amazingly little pain in the joint itself, when one considers the amount of apparent destructive changes that have taken place. Yet he has complained, and does complain, of severe shooting pain throughout the leg, and especially in the upper one-third of the tibia, which you can plainly notice is much enlarged. The shooting pains spoken of are common to and characteristic of this general disease, for I take this to be clearly a case of Charcot's disease of the joint, a condition not infrequently present as a complication of tabes dorsalis. It is so named because Professor Charcot, of Paris, was the first one to thoroughly describe it. The most noticeable peculiarity about the disease is well illustrated in this case, in which these most destructive changes have taken place without correspondingly severe manifestation of their progress.

Believing the patient will be best relieved of his trouble by an amputation of the thigh through the middle, we will proceed to do that operation.

The limb was removed by forming the ordinary anterior and posterior flaps by transfixion. No antiseptic fluids or washes of any kind were used on the stump; it was dressed with dry dressing, iodoform, iodoform gauze, borated cotton. The thigh had been rendered thoroughly aseptic before the operation.

The joint was opened and displayed to the class; it displayed the characteristic appearance of a Charcot's joint—the fluid sanguineous, the articular ends of bones enlarged, that of the tibia being worn off as by a grindstone and much hardened.³

² The wound is dressed on the eighth day and found perfectly healed. The pain has disappeared.

³ The patient was brought in on the eighth day and showed to the class for first dressing. The wound had healed throughout by first intention.

¹ The stitches were removed on eighth day, union throughout. Temperature has not reached 100° F., has felt comfortable, can move about in bed, and sat up on fifteenth day.

Case 5.—Miss R. Chicago, æt. 25, American, flower girl. General condition fair, family history good. This patient is suffering from persistent and apparently uncontrollable pain following excision of the knee for tubercular disease. The excision has been a perfect one and the recovery is complete, but the patient is prevented from following her avocation and demands an amputation of the thigh, in spite of advice and protests of physicians and friends.

Two operations for the purpose of dissecting out nerve fibres compressed in the cicatrices left after the excision have been made, but these failed to give relief. The amputation will be made as low down on the thigh as possible by means of two skin flaps formed from without inwards and a circular division of the muscles just above their base. You notice that in dissecting up these flaps I am very careful to take up with the skin the full thickness of the superficial fascia beneath it. This is to provide for the flap's nourishment. The blade of the knife is always made to cut transversely to the limb's axis in severing the tissues. In all flap amputations the sum of the lengths of the two flaps should be about 2 inches longer than the full diameter of the limb at the seat of section of the bone, so that they may be free from any tension or harmful retraction, and also to avoid a conical stump when the healing is complete. The amputation was made as described and dressed as the previous one. You will notice that in both amputations the flaps are approximated by continuous catgut sutures which bring the skin edges together neatly and accurately throughout the entire length of the wound.⁴

Case 6.—J. F., Chicago, æt. 3 years, poor health. This child comes before you with a well marked swelling of the dorsal surface of the hand principally covering the head of the metacarpal bone of the middle finger. The trouble is uncertain in character. An incision over the surface of it demonstrates it to be a tubercular abscess, connected with tubercular degeneration of the head of this metacarpal bone. I will proceed to curette the cavity freely and remove the particles of dead bone. It will now be washed clean and packed with iodoform gauze and the wound covered with borated cotton.*

Case 7.—Otto B., Missouri, æt. 15. This is a well-marked case of talipes equinus following infantile paralysis. There evidently has been an arrest of development in the right lower extremity of this patient, for it is much smaller in every way than the other one. The activity of the muscles has been restored, but in all probability his attempt to equalize the length of the limbs has been an element in the extreme contraction of the muscles attached to the tendo Achilles. All we

can do in this case is to divide this tendon and place the foot at a right angle with the leg and fix it in that position by a plaster of Paris cast. This brings the side of the foot of this diseased leg two or three inches above the ground when he stands erect on the sound leg, so he will be compelled to wear a shoe sufficiently elevated to make the limbs of equal length. This will enable him to walk with much more ease and comfort.

In dividing the tendo Achilles introduce the tenotome through the skin an inch away from the edge of the tendon; pass it subcutaneously either above or below the tendon while it is relaxed; turn the cutting edge toward the tendon rendered tense by forcible flexion of the foot. A slight pressure upon the knife will divide the tendon readily. It is well to choose the narrowest part of the tendon for its division. It is important to avoid wounding the posterior tibial artery. All of this is done and you now see the foot comes easily to a right angle with the leg, and you notice as well the deep depression in the course of the tendo Achilles caused by the separation of the divided ends. This space will be filled up with connective tissue and the function of the tendon restored.⁵

Case 8.—Mrs. Catherine M., Chicago, æt. 52, Irish, housewife, general appearance good. This case presents for inspection an angry-looking growth about the size of a bean, situated over the triangular cartilage of the left side of the nose. The patient tells us it is growing larger and becoming more irritable. I deem it to be an old wart taking upon itself epitheliomatous degeneration. Its removal is advised and consented to. The tumor is included in an elliptical incision far enough away to be in healthy skin. Its depth extends entirely through the thickness of the skin.

The edges of the resulting wound are easily approximated by two sutures, making a linear scar entailing no deformity, dressed with iodoform gauze.⁶

Case 9.—A. T. J., Chicago, American, drug clerk. This young man presents himself with a swelling as large as a good-sized potato and very similar in shape, on the posterior surface of the upper part of the right leg. The growth evidently pushes all the muscles of the calf in front of it. It is hard and irregular to the touch where it can be felt underneath the edge of the muscles. It causes no pain or inconvenience except from its size. It evidently is an outgrowth, bony in character, from the posterior surface of the upper part of the tibia. It belongs to the class of innocent tumors and is technically called an exostosis. I cannot advise any operative procedure so long as it is harmless in its manifestation. Should it at any time become a source of trouble through in-

⁴ On the eighth day the patient was brought before the class for the first dressing. Wound united, patient had been perfectly normal and free from pain ever since operation.

* Wound perfectly healed at end of five weeks.

⁵ At end of two weeks cast removed, position perfect. Cast re-applied, to be left on for three months.

⁶ On eighth day wound is united throughout.

creased enlargement I think it can be safely removed.

Case 10.—Mr. Wm. V., Chicago, æt. 47, English. This patient shows his hand with the little and ring fingers flexed into the palm of the hand and fixed in that position. When I attempt to extend them and examine the palm of the hand beneath them I feel a very readily a distinct band rise up under the palmar skin. This band is rendered very tense at every attempt at extension of the fingers. On either side of these bands are to be seen several small dimple-like depressions in the skin. This trouble is technically termed a case of Dupuytren's contracted fingers, and is a deformity resulting from injury to the fascia of the hand which produces a contraction of the connective tissue in and about the deep fascia. Its tendency to contract flexed the fingers and holds them immovable in this abnormal position.

The flexor tendons are not primarily concerned. The trouble was named after Prof. Dupuytren because he was the first to accurately describe the pathological conditions.

To overcome this deformity we introduce the tenotome and divide all of these resisting bands met with in succession as the fingers are forcibly extended. This is all done subcutaneously, as you plainly see; the hand in the first place having been rendered positively aseptic. The wounds are dressed with iodoform and iodoform gauze and the fingers bandaged in an extended position to a well padded splint.⁷

Case 11.—J. W., Chicago, age 30, Scotchman, machinist, generally healthy, well nourished. On examination we find that this man has a mass taking the place of the left epididymis of the same size and shape and of a cartilaginous hardness. Cases of this character and presenting this special feeling have in my experience proven to be tubercular. Based upon that belief this affection, however slight and simple it may seem to be, is of serious import to the patient. While it is present it is a constant source of danger from possible general tubercular infection. The only reasonable treatment to advise or pursue is total extirpation of the diseased organ. The patient does not consent to any such interference, and I did not expect him to, still I am quite well convinced that it is the safest procedure to adopt in this case, and is my duty to warn him of the risks he runs with this centre of disease in his system.

As he will not consent to the operation suggested, we will prescribe such medicines as are supposed to have a beneficial influence on this disease. Bichloride of mercury of $\frac{1}{8}$ a grain, three times a day.

Case 12-17.—The six patients now shown to

⁷ Two weeks after the above operation the little finger is in the extended position and movable. In the ring finger full extension is still not possible on account of a few more bands, which will shortly be divided.

you are all illustrations of the enlargement of the thyroid gland, technically termed goitre, or bronchocele or struma.

The points in diagnosis are, first, its position in front of the neck; second, its shape, spread eagle, a small body in the centre and large wings on either side; third, it rises and falls with each act of deglutition, as I illustrate with this patient, because it is normally fastened to the trachea.

The growth may be unilateral, bilateral, or central, according as one or both lobes or the isthmus, or all three are the site of the manifestation of the disease. The growth may be cystic, single, or multilocular, adenomatous, vascular, or fibrous; or the tumor may be a sarcoma or a carcinoma of the thyroid gland. Again, we are often called upon to treat cases of enlargement of the thyroid gland associated with bulging of the eyeballs and distressing pulsation of the large arteries of the neck. Such cases are termed exophthalmic goitres.

The cases before us are all examples of cystic or adenomatous enlargement of the thyroid. We have fallen into the habit of treating these cases by the weekly injection into the substance of the gland of a drachm of the 5 per cent. sol. of carbolic acid in water. This treatment is followed by a rapid diminution in size in many cases, and a perceptible improvement in all who have regularly returned. I have added to this treatment the use of 5 drop doses of Donovan's sol. three times a day, with what benefit I am not yet able to state.

Case 18.—This patient returns to show the result after removal of two-thirds of the lower lip for epithelioma. The wound is perfectly healed and the deformity of the mouth very slight, when you consider how much tissue was removed.

MEDICAL PROGRESS.

ETIOLOGY AND TREATMENT OF OBSTINATE VOMITING OF PREGNACY.—In a paper read before the Académie de Médecine by M. GUÉNOR, the author summarizes his conclusions as follows: The idea of combating obstinate vomiting of pregnancy with a single remedy or mode of practice seems to be quite erroneous, as its uselessness has been proved by experience. No one therapeutical agent has been shown to exercise a constant curative effect. This is as we should expect inasmuch as the obstinate vomiting of pregnancy is dependent upon a variety of causes arising from three organs or systems, first, the uterus, which at once is the very focus of pregnancy and a source of special excitement affecting the other organs. Second, the nervous system, (spinal and ganglionic) which by the aid of its

reflex power transmits the excitement to other organs. Third, the stomach, which is the seat and agent of the principal symptoms, and especially susceptible to uterine influences.

In order to treat these cases with assured success it is necessary to have recourse to a complex treatment which is directed to all three of the sources of the disorder, and hence there are three fundamental indications to be considered; these are, first, to reduce the morbid or abnormal uterine excitement by remedying the various pathological conditions which produce it. For this purpose belladonna, cocaine, morphine, vaginal injections, or topical application, the Gariel pessary, elevation of the hips with a sloping decubitus of the body, cauterization and even artificial dilation of the cervix are the resources which may be most advantageously employed, according to the necessities of each case. Second, to diminish the activity or suppress the exaggeration of reflexes, a result which may be secured by the use of chloral with the bromides, by the application of cold to the spine by means of ice or the ether spray, by moral influences, by descending galvanic currents, etc. Third, to combat the intolerance of the stomach by treating its various disorders and soothing its irritability by means of the following agents: Diet, almost absolute and rigorously enforced; the avoidance of all acid drinks, wine, orange and grape juice, etc.; the use of mineral waters, such as Vals or Vichy, and ice in very small quantities; blisters at the pit of the stomach; ether spray in the same region; the occasional use of laxatives or substances calculated to regulate the functions of the intestines.

Finally, to secure the full effect of such treatment, it is particularly essential to lessen the work of the stomach as much as possible, and with this in view, rectal hypodermic and endermic medication should be made available as far as possible.—*Bul. de l'Acad. de Méd.*

VARIATIONS OF BODILY WEIGHT IN TYPHOID FEVER.—Dr. L. H. COHIN, of Paris, has made valuable observations in the Cochin Hospital regarding the daily variations in the weight of typhoid fever patients. He found that the loss of weight per diem amounts to from six ounces to one pound. In convalescence the mean of daily gain was about nine ounces. The maximum of loss of weight corresponded to the end of the second week, or the beginning of the third. The investigator also established the fact that the patient lives at the expense of his own substance. His general conclusions are as follows:

1. Typhoid fever presents two distinct periods, one of loss and one of gain; certain accidental causes may modify them, but cannot effect their general character.

2. The daily loss is due to febrile combustion chiefly, and but little to abstinence.

3. The daily loss varies with individuals.

4. The losses in nitrogen and weight are almost parallel with the march of the temperature, without always following it exactly.

5. The study of the weight chart may aid in prognosis, a continual rise in the weight being a sign of convalescence.

6. The complications of the disease augment the loss of weight.

6. The study of the loss of weight enables the physician to determine with precision the action of nutritive substances in fevers.

8. The loss of weight in a typhoid patient takes place each day in a uniform manner.—*Boston Med. and Surg. Journ.*, Sept. 12, 1889.

TONSILLITIS.—Dr. G. F. BONCSEIN, of Baltimore, draws attention to the frequency of tonsillitis in children, quoting Dr. Chappel's report of 2,000 children examined in New York, among whom $13\frac{1}{2}$ per cent. were found with enlarged tonsils. Regarding treatment, Dr. Boncsein advises *écrasement* with the electro-caustic snare or igni-puncture, with the sharp-pointed electrode, the latter method having the following advantages: 1. It is more easily managed, and 2, it causes a great deal less pain, and none after the preliminary application of a 4 per cent. solution of cocaine. The application is simple; under red heat the electrode is plunged into the tonsil to the depth of a quarter of an inch, held there for a moment and then withdrawn. A second and third puncture may be made at the same sitting; four to seven days must elapse between sittings, and from three to five sittings will be necessary to contract the tonsil. The after-treatment consists in the use of alkaline gargles. The only other local treatment used by the writer consists of poultices to the outside of the throat, inhalations of steam and incision when there is an abscess. As for constitutional treatment, he has employed salicylate of sodium with benefit in rheumatic cases, and benzoate of sodium to control the febrile element of the disease. He has no faith, however, in the curative or abortive power of any remedy in acute tonsillitis, which he believes to be a specific disease running an average course of three and one-half days in spite of all treatment.—*American Journ. Med. Sciences.*

TINCTURE OF EUPHRASIA IN ACUTE CORYZA.—Dr. G. M. GARLAND strongly recommends the tincture of euphrasia in the treatment of ordinary colds. He finds that if given in the early stages the coryza is usually aborted, but that in advanced stages its effects are much less marked. The dose for an adult is ten drops every two or three hours. In infants and children the drug should be given in smaller doses well diluted.—*Boston Med. and Surg. Journal.*

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SATURDAY, DECEMBER 7, 1889.

MILK AS A VEHICLE OF TUBERCULAR INFECTION.

At the meeting of the Association of American Physicians at Washington, Sept. 20, 1889, Dr. HAROLD C. ERNST, of Boston, read an important paper on the question of the safety of using the milk of tuberculous cows for food. Although the possibility of contracting tuberculosis from this source has already been recognized, the danger has been generally supposed to be confined to the milk of cows whose udders were invaded by the disease. Dr. Ernst gives very strong reasons for thinking that there is not even this degree of security. His investigations were made under the auspices of the Massachusetts Society for the Promotion of Agriculture upon thirty-six tuberculous cows, which presented no evidence of disease of the mammary glands. The milk was examined for the tubercle bacillus, inoculations of the milk and cream were made upon rabbits and guinea pigs, calves and pigs were fed upon the milk, and, finally, thorough post mortem examinations were made on the animals which gave positive results. From the account given of the methods employed, the examinations would seem to have been made with great care, and with all due precautions against all possible sources of error. The results obtained were decidedly startling.

Tubercle bacilli were found in the milk and cream of ten of the thirty-six cows examined. Out of eighty-seven animals inoculated with

milk and cream from fourteen cows, seventeen were infected from seven cows. Five out of twelve calves and two out of five pigs fed with milk from the diseased cows became tuberculous. Finally, tuberculosis of the udder was not evident to the naked eye in any cow examined, and in only one case was a single tubercle found by the microscope.

The bearing of these facts is obvious. If the danger of infection is anything like as great as would appear, the freedom of milk from the customary adulterations is a matter of trifling importance in comparison with the soundness of animals that furnish it. All the tuberculous cattle should be promptly slaughtered, both in the interest of the owners and of those whose health is endangered by them. In case of any doubt as to the quality of the milk supply, it would seem to be the part of prudence to guard against the possibility of danger from these sources by boiling the milk.

It cannot be claimed that KOCH's discovery has contributed very much, thus far, to the therapeutics of phthisis, and it may be doubted if, rightly understood, it gives much encouragement to the search for a specific. It is not, perhaps, impossible that a poison for the bacillus may be found which will be innocuous to the system, but as a rule, what will kill the weeds will kill the crops. Nevertheless, the benefits of increased knowledge are manifest, even now, and it may not be over sanguine to hope that the time will come when, like leprosy and the plague, tuberculosis will be practically extinct in civilized lands.

RELATION OF ALCOHOL TO INSANITY.

The dependence of a large percentage of crime upon the abuse of alcohol is a matter of everyday observation, and the relation of cause and effect is no longer seriously questioned. The rôle that alcohol plays in the causation of insanity is for many reasons a much more obscure and difficult problem. The determination of the causal factors in any given case of mental alienation, even in so-called puerperal cases, is at best and necessarily but a summation of the probabilities. The facts upon which the decision is to rest are difficult to obtain and, when elicited, usually point to a number of predisposing conditions and a pleurality of possible exciting causes. In American

communities the difficulties are amplified by the transition state of our populace. What to-day are hamlets, in a decade are towns, and in a score of years may be cities. All habits and modes of living may thus, for any individual, be widely varied within a short period, and who can estimate its influence upon the character and nervous organization. Besides, our population is heterogeneous in a high degree. The higher proportion of insanity among foreign born, as compared with those of native birth, influences averages for the worse and makes statistics misleading and of doubtful value. An opinion is current that insanity is greatly on the increase in this country, but this is not absolutely to be determined. Many cases such as formerly were cared for by friends or allowed to run at large are now placed in asylums and brought within the limits of statistical returns. The better care, treatment and protection of this unfortunate class has, during the past two decades, notably increased their longevity, so that the average duration of insanity has been lengthened nearly fifty per cent. Moreover, many are now placed under such medical treatment and control as can only be afforded in well-equipped institutions, who in former years would not have been admitted, and whose sanity would never have been questioned. Then the immigrant class, predisposed to a high insane average, are subjected to the toils and privations and hardships of newcomers, to which is added the potent depressing influence of separation from home and friends. From these various sources of error any deductions upon the question in hand derived from observations in this country would have but little reliability.

It is, therefore, with interest that we read the proceedings of the Third International Congress for the Study of Alcoholism, held in Paris last August. England, Holland, Belgium, Switzerland and some other countries were fairly represented, but on the whole the affair was distinctly French, and the observations and conclusions adopted pertain to France in particular, though applicable to other European States.

It was announced, and the statement was supported by Government reports, that insanity had increased nearly one-half in the past twenty years. The pertinent question is in regard to the cause of this appalling increase. In France, for instance, there is no considerable movement of

population, not even by natural growth, the conditions of life and society are crystallized in the mould of tradition and custom, their hospital facilities are only enlarged upon urgent demand, and the care of the insane is about what it was twenty years ago, speaking from the standpoint of protection, supervision and asylum quarters. Their people are in a high measure of one nationality, for, outside of Paris, resident foreigners are comparatively rare. While then the population and general conditions have remained nearly stationary, insanity has wonderfully multiplied.

It was also shown, and the showing is again based on Government reports which are for this particular absolutely reliable, that the consumption of alcohol for drinking purposes had increased in almost the same ratio during this period of twenty years. These two facts taken together, suggestive as they are, would not justify hasty generalization. It may be urged that the tendency of insanity to increase from hereditary causes might account for the enlarged percentage of this unfortunate class. An increment from this source must undoubtedly be admitted, but a tendency to barrenness among those of well-marked hereditary neurotic taint has long been observed and acts as a fortunate though partial offset. Probably a history of the severer neuroses in antecedents and near relatives is obtained in cases of insanity as frequently as a distinct hereditary insane trace, and the question as to the dependence upon alcoholism of these diseases which seem to entail a liability to insanity is raised. Many authoritative writers and prudent observers consider such a relation to often exist.

A strong light is thrown on the situation by the fact that the increase noted in France is almost entirely made up by cases of alcoholism and general paralysis, the ordinary forms of insanity retaining approximately their former ratio. The same thing is true in a greater measure in Holland, where, of late years, alcohol distilled from potatoes has come into general use, the effect of which is said to be particularly harmful as compared with alcohol otherwise derived. It probably is in accord with the statements of a majority of trustworthy writers to attribute general paralysis to alcohol or the vices which are correlated with its excessive use. DR. GARNIER, in a paper read before the International Congress of Mental Medicine held in Paris about the same time, goes to

the extreme of attributing general paralysis solely to the abuse of alcohol, a position strongly combated in the debate which followed and which is not altogether tenable unless the widest latitude for indirect causation is granted.

The members of the Congress first mentioned manifested a marked unanimity of opinion in regard to the relation of insanity to the consumption of alcohol, and the following resolutions or views were adopted:

1. The increased consumption of alcohol is one of the principal causes of the development of crime and insanity.

2. A diminution in the number of drinking places being one of the means of reducing the consumption of alcohol, this Congress is of the opinion that Governments should take measures to restrict the number of dramshops.

Opinions were also expressed that crimes committed during the delirium of inebriety should not entail full responsibility but, on the other hand, that society should be protected against such drunkards by their being subject to sequestration in suitable retreats.

Whatever may be one's personal opinion, the expression of the above views, coming as they do from an intelligent body of men, must carry emphatic weight. It must be borne in mind that the members of this Congress probably never contemplated prohibitory legislation, that they live in countries where in some form alcohol is, as a rule, a part of the dietary, that in no way can the cry of fanaticism be raised, and that, in all probability, the great majority of them use alcoholics more or less themselves. This lends added importance to their action.

It is probably well within the limits of facts to consider the abuse of alcohol as not only capable of causing insanity, but as being a frequent cause of this the most distressing and wide-reaching calamity that can befall an individual or a family, and which imposes a heavy burden of tax and responsibility upon the community at large.

AN ESSENTIALLY WOMAN'S HOSPITAL.—A hospital devoted to diseases of women and under the patronage of the Princess of Wales is to be established in England. The special feature of the institution is that all services to the patients, both professional and otherwise, are to be rendered by women.

LOCAL MEDICAL ORGANIZATIONS.

With a commonwealth that has within a century developed from thirteen States to forty-two; with a population increased from three to over sixty millions; in the midst of a people keen of perception and intensely practical in their estimates; with whom, in every department of learning, from that of the public school to the University, a high order of culture is possible, and where the varied industries are so well rewarded that ample means are at command, it is not singular that men in all the walks of life are keenly alive to their personal interests, and studiously intent as to the best methods of accomplishing desired results. Thus, our very industries are prolific of invention, and little heed is given to precedents. Every department of education is feeling a like strong impulse to the development of better and better methods of instruction, and the advances that have been made in educational methods within the last few years are simply marvelous. This impulse is at last taking strong hold upon the medical profession. Medical men are more and more dissatisfied, as well they may be, with the present professional status. The demand for better methods of teaching; for men better trained in preliminary studies; and for a much higher standard, to which they shall attain, before entering the medical profession—these are the prominent themes that point the pens of our best writers, and command the considerate judgment of our best thinkers.

The great problem which now confronts us, and which during the next twenty-five years must have its practical solution is this: how so to bring the standard of medicine from its present low state to that high plane, and the masses of medical men to that degree of culture where medical science shall find legitimate expression, and the art of healing render its best services to men, creating positions which men may hold as posts of honor, and up to which quackery and charlatanism may not climb. This is the requirement of the hour and of this age.

Science and art, and invention, are laying their contributions at the feet of the medical profession with a demand to be utilized in the interest of mankind. The dawn of a new century is upon us. Already the outlines of grand possibilities can be discerned. If at the present hour medical men shall prove themselves unequal to

their opportunities, then let there be no murmuring though the honors of our profession continue to trail in the dust, while charlatans run riot in their misrepresentations of medical science. But this shall not be, for the men are already upon the stage who will do valiant work in the saving of our profession from such humiliation.

There needs at this stage to be set forth not only a clear statement of the work to be done, such as shall command the hearty approval of a united profession, but secondly, that the means for successful accomplishment shall be used with utmost discretion. Whatever efforts the profession shall put forth for medical advancement in America, those efforts must be in full accord with the genius of American institutions. It is clearly manifest that legislation, and legislation only, can accomplish the desired result. With us that power of legislation vests with the people, and it is their voice which must first be heard before results can follow. For more than a century we have been accustomed to trust this people, and we can trust them now. Assure them fully as to what their best interests require, and needed legislation will quickly follow. We come then to the significant fact, that our present greatest need is that of medical men, who by ability and culture, and fidelity to their profession, shall be able to rightly educate the masses as to their common good, and so develop a healthful public sentiment. In this great work it is true that every able and highly cultured medical man will be needed as a standard bearer, but it is equally true that the burden of this work must fall upon the rank and file of our profession, as they shall mingle with the masses.

In the accomplishment of results so important men must act with intelligence and in harmony. Hence, the imperative need of efficient local medical organizations in every hamlet, town, city and county of every State in the Union. Each organization has a right to command the best of talent and the best of culture that the profession of that locality can contribute, and the duty of every medical man is only measured by his ability to rightly influence the body politic. Here lies the power that at last shall move the State. The vitality of local societies will determine the power and efficiency of State organizations. The delegations from the local societies will give to these the impetus of personal convic-

tions, and State societies will only be what local societies shall choose to make them. And in this general work of local organization our medical journals can wield their power with great efficiency for good, and serving best the needs of the profession they shall serve themselves a well.

THE MEDICO-LEGAL RELATIONS OF ANTI-SEPTIC SURGERY.

Shall Listerism be accepted as a criterion of the medico-legal responsibility of the operating surgeon? There are those who hold pronounced views respecting the status of antiseptic surgery, who virtually say that the surgeon who has not adopted it is not doing his best for his clients, and who seemingly would not find it difficult to testify against their a-Listerian brethren if or when called upon to give expert testimony in a suit for malpractice on this ground of the nonuse of antiseptics.

We shall not be surprised if some acute legal mind might seize upon this proposition and make trouble in the camp of surgery—or try to do so. That he shall be able to make good his case may well be doubted, or that the courts will fall into practice of measuring all surgery up to the enthusiastic views of some Listerians must be doubtful, also. However proudly the asepticians may feel, or however roundly they may boast in their lectures or addresses, there remains yet the time-honored dictum of generations of medico-legal experience: the surgeon “undertakes to employ a fair, reasonable and competent degree of skill.”

The surgeon does not contract to furnish the highest possible degree of skill, no more than the physician contracts to make a perfect cure. He is not required to subscribe to any particular theory of treatment any more than he is expected to be the disciple of any particular school. He is to be true to himself and to exercise his attainments and powers to the extent of his ability; he is the practical exponent of the argument of POLONIUS when he declares to LAERTES that with self-truth he could not be false to any man. And a century of judges have ruled that way and have saved a world of loss and trouble to assailed practitioners. Wherever that line of judgment is departed from, if only temporarily, there it is likely that an epidemic of malpractice suits, under-

taken on speculation, will spring up. However enthusiasts may wonder at the laws delay in accepting their favored theory as a ground for legal decision, it is best to be lenient with that conservative trait in the legal character, for it has served the medical profession many a good turn in days gone by, and may do the same again whenever malpractice suits shall become fashionable. Like some fruits, medico-legal postulates take a long time to mature.

EDITORIAL NOTES.

HOME.

RECTAL TREATMENT FOR THE VERY POOR.—The New York Post-Graduate Hospital will hereafter have a special clinic for diseases of the rectum.

Dr. Charles B. Kelsey has been appointed to have charge of this clinic. He invites especially those who are quite without the ability to pay any medical fee, a deserving class, not infrequently who suffer from prolonged neglect. The more necessitous the case is, oftentimes, the greater the neglect, in this type of disease.

UNIVERSITY OF PENNSYLVANIA'S DEPARTMENT OF PHYSICAL EDUCATION.—The physical culture proffered, at the University of Pennsylvania, under the direction of Dr. A. H. P. Leuf, to the professional students, as well as the academical, is accepted more and more every year. When the professionals go into training for any of the athletic contests, they have the gymnasium fee remitted to them. In "The University," October, 1889, Dr. Leuf has an article on what he regards as some of the existing defects in college physical training, and their remedy. A winter-house for practice, to cost \$5,000, is a pressing need, and he is actively engaged in the raising of funds for its construction.

FOREIGN.

SANITATION IN FRANCE.—A decree issued June 3, 1889, authorizes the city of Angoulême to negotiate a loan for the purpose of defraying the expense of improving the water supply of that city. The city of Alençon is also authorized to effect the same improvements. Beaune, (Côte d'Or) is authorized to contract a loan to pay for an improved water supply and for the construction of sewers. The cities of Sedan and Nice are

authorized to improve the drainage by contracting a loan to defray expenses. Reims and Poitier have followed the example set them by the French capital as regards the sewage system and subsequent utilization in agriculture.

TRANSMISSION OF DISEASE BY BRUSHES AND DENTAL INSTRUMENTS.—A discussion recently took place at the Conseil d'Hygiène concerning the transmission of certain diseases by hairdressers and dentists, the brushes and instruments being used in common for all their clients. M. Lancereaux wished to have stringent measures enforced, and cited a case of phthisis which Dr. Cochrane, an American dentist, alleged was transmitted by a dentist's instrument. M. Du-jardin-Beaumetz and others declared that there were great difficulties in the way, but recommended great care in schools and public institutions.

VACCINATION IN JAPAN.—Vaccination, according to the *Medical News*, has been obligatory for some years in Japan, and every infant is required by the police to be vaccinated. The value of the procedure is, however, well recognized by the people themselves, and the government hospitals in every town are always thronged with applicants on the weekly "vaccination day." In 1886 there were 1,531 vaccinations to each 10,000 inhabitants.

INFECTIOUS DISEASES IN THE THAMES.—The *British Medical Journal* says, that Dr. W. Collingridge, Medical Officer of Health for the Port of London, in his half-yearly report, strongly recommends the erection of a small isolated building at the Port Sanitary Hospital for the accommodation of small-pox patients, who are at present treated in the same building as those suffering from other diseases. Referring to the dangerous position of training ships, which are without means of isolating infectious diseases in cases of outbreak, he recommends the establishment of a small isolated hospital for each ship. Reference was made to an outbreak of chicken-pox among the crew of a vessel after her arrival in London, three weeks after the first patient had apparently recovered, in consequence of which application was made to the Local Government Board to add chicken-pox to the list of disorders regarding which the Port Sanitary Committee have power to make regulations.

TOPICS OF THE WEEK.

LISTER'S NEW ANTISEPTIC DRESSING.

In an address delivered before the Medical Society of London on November 4 by SIR JOSEPH LISTER, Bart., F.R.S., Professor of Clinical Surgery in King's College Hospital, he gives in a most interesting manner the details of a series of experiments extended through several years, conducted with a view to determine what substances are most available for antiseptic dressings, and also to discover the most approved methods of their application. In this address he brings to the attention of the profession the double salt of the cyanide of zinc and mercury, as one having special claims to favor both as a germicide and for its inhibitory power as well. By the agency of starch the double cyanide becomes adherent to gauze and may be used with facility. Reviewing his experiences with this new dressing he says: "Such being the case I feel not only permitted but bound to bring this material under the notice of my professional brethren. As to the composition of this so-called double salt, it is for the present uncertain. This much is already established: that the cyanide of mercury is in very much smaller proportion to the cyanide of zinc than Watts' *Chemistry* would lead us to expect the double salt would give. But what the precise composition of the salt is we do not yet know. I am having it investigated by the Pharmaceutical Society, who have kindly undertaken the work."

Prof. Lister concluded his admirable address with the following words: "The sketch which I have given you of this investigation, though it has, I fear, wearied you conveys but a small idea of the toil it has involved. There are those who still believe that the use of antiseptic substances in surgical practice is always useless, if not injurious. The germ theory of septic diseases is indeed now happily established incontrovertibly. All now admit that septic mischief in our wounds depends upon the development of microorganisms in them derived from without. But the gentlemen to whom I refer are, more or less logically, disposed to trust everything to the antiseptic powers of human tissues.

"I believe I happened to be the first to direct attention to the antiseptic agency of living structures, and there is perhaps no one who attaches greater importance to it than I do. Without it surgery in former days would have been absolutely impossible. Still, I know too well from experience that it cannot always be trusted, and that the use of antiseptic adjuvants is in the highest degree important. And I have the satisfaction of knowing that there is among you a constantly increasing number who, when they have operated on an unbroken skin, with a fair field around for the application of their dressings, if they see septic inflammation occurring in the wound with its attendant dangers, know that it is their fault or the fault of the antiseptic appliances at their disposal. To those among you who are impressed with this conviction I offer the dressing which I have described as the most satisfactory that I have hitherto met with; and I venture to hope that you will regard it as a not unacceptable addition to your resources."

THE CAUSES AND PREVENTION OF INFANT MORTALITY.

At the recent meeting of the American Public Health Association in Brooklyn, DR. JEROME WALKER, of New York, presented a paper with the title named above, from which we make the following extended abstract. We only regret that we cannot present the article entire.

It is believed by many that the ratio of infants' deaths to the whole number of deaths in any community is a test of the healthfulness of that community. It has been repeatedly said that the public administration of sanitary measures in any city or town can be judged as to its efficiency by the rate of infant mortality in the city or town in question, and that a decrease in the mortality of infants means more efficient health authorities than hitherto. When I agreed to read a paper before this Association it seemed an easy matter to show that infant mortality has decreased of late years in this country, owing to an increased efficiency of health boards and other sanitary associations; but a study of statistics does not show either that the mortality has decreased in the country at large, or that the efficiency of health boards in general has increased sufficiently to be a strong factor in effecting a decrease. Notwithstanding these conclusions the prevalent high death-rate of infants, *i. e.*, of children during the period of the first dentition, is not a reflection upon sanitary science, for wherever the science and art of preserving health has had a fair chance, infant mortality has been reduced. We may agree with Dr. H. B. Baker, of Michigan, who says: "I have no hesitation in subscribing to the belief that much of the infant mortality could be prevented by thorough and enlightened action by local boards of health in cities and villages;" but we all know that this sort of action will not be taken until, by civil service or otherwise, men best qualified for positions on such boards get them, and will give that personal attention to sanitary details that the mere political doctor will not do.

Sanitary science will not have a fair chance until personal attention of qualified persons to sanitary details can be had, and this cannot be, in some cities, with the meagre appropriations made for the execution of health laws. The outlay for proper sanitary work seems enormous to the taxpayer, but a proportionate result justifies the expenditure. In my opinion the rapid advance that will be made within the next ten years in sanitation, and the training that the people will undergo, will materially lessen infant mortality. As an evidence of this are the following facts: In Brooklyn, in 1878, the population was 531,100. There were 11,075 deaths from all causes. Of these deaths 5,294 were among children under 5 years of age, and 2,943 of children under 1 year. In 1884 the population was 644,526; total number of deaths, 14,116; of children under 5 years of age, 6,271; under 1 year, 3,924. In 1888 the population was 794,682; total number of deaths, 18,061; of these 4,944 were among children under 1 year of age, and 3,075 of children between 1 and 5 years.

To rear a child now-a-days so that it shall have a healthy mind in a healthy body is more difficult, probably, than it was fifty years ago. As wealth increases, poverty increases and the susceptible baby suffers.

Worry, anxiety, insufficient food, over-feeding, insufficient sleep, coddling, exposure, all bring with them dangers to health. Among the causes of sickness which seem to be growing stronger are the over-heating of houses, frequently with air deprived of moisture and laden with gaseous impurities from contact with cracked and over-heated furnace pots, over-feeding with prepared baby foods, sweet crackers and dainties, the relegation of the care of children to nurses, many of them tricky and incompetent, an increased susceptibility to nervous complications and disorders, and artificial feeding instead of natural nursing by the mother. "Why," asked the late Prof. Charles Buckingham, "do American born females make such poor wet-nurses compared with the immigrants from Ireland or Germany? After nearly thirty years of practice I cannot answer the question. That it is a fact, few practitioners in our large towns and cities doubt. . . The consequence of the early failure of the supply of breast milk is the early attempt to fit the stomach for other food. Add to this the parental pride which interferes for the poor pleasure of seeing a toothless child swallow the food of an adult, and you have for the result cholera infantum, dysentery, convulsions, tabes mesenterica; and if, by reason of extra strength, the child passes the first dentition, it is more likely to be cut off during the second, or to become later a dyspeptic or even phthisical. . . The fact has become more and more apparent that large numbers of women cannot nurse their children, and those who are beginning to constitute the exception. Formerly this inability was not so common, occurred only occasionally, and, when partial, did not attract attention."

Take this true statement of Dr. Buckingham in connection with the following extracts from the writings of Drs. Nathan Allen and Elisha Harris, together with the fact that a considerable number of physicians now-a-days advocate, for various reasons, artificial feeding in preference to natural nursing, and we have an important factor in the increase of infant mortality and one which boards of health cannot well reach. "The type of a good nurse," says Dr. Allen, "is a woman with a sound and healthy body evenly balanced in all its parts. There should not be a disproportionate development in any of the organs or systems of the body. Heredity and the mode of living of the average woman produces an excess or deficiency in nervous or muscular force and an undue development of the lymphatic organs. Among the causes are educational pressure, constant excitement, depression of spirits, too much society, hard work, great exhaustion, etc." In 1874 Dr. Harris wrote to a special committee of the Board of Supervisors of Kings County as follows: "The three great private charities in New York city that receive newly born infants and also provide, to some extent, lying-in wards, admit, in the course of the year, about 1,900 newly-born infants. The rate of mortality in the groups of infants whose mothers (however poor or however young) tarry to nurse their offspring has been, during the past four years, just about 14 per cent., while in the hired wet-nurse class the rate of death averages about 27 per cent., and in the strictly foundling and orphan class, that are bottle fed or spoon

fed, the rate is 70 per cent. dead in the first year and 90 per cent. before the end of two years. The causes in general of infant mortality are: First, hereditary, viz: syphilis, scrofula, tuberculosis, excessive nervous irritability, etc.; second, those due to the child's environments, too little or too much care, exposure or over-protection, insufficient or too much food. These causes result in dyspeptic ailments, intestinal disorders, contagious diseases, marasmus, convulsions, capillary bronchitis, pneumonia, etc. While "general debility" is not considered as a separate and distinct affection, the term is a convenient one to use to designate that condition which follows, especially in our cities, many cases of intestinal disease. Whooping-cough, measles, scarlet fever and diphtheria or that is in the child at birth. Muscular and nervous debility are too frequently associated with the ailments of children now-a-days. This being so, there is more need of recuperation in the summer than heretofore.

How to correct the mode of living among the ignorant demands the wisest thought of the wisest minds, because this would be to reach the roots of the fearful mortality among them. Tenement house laws and health ordinances have their place and should be enforced, but these only reach the border land, as it were, of the difficulty. Within the apartments where the family life goes on is where the laws of health are really broken. It is here, I conceive, that a health officer finds his most important function. It is his by repeated visitation, by wise suggestion, by personal influence, by creating the conviction that he is a friend, so his coming will be welcomed and his advice heeded—by all these and many other means at command—to reach, impress and control the minds of the ignorant masses. Parents can be taught how to sterilize milk, why and how litmus paper should be used as a test for acidity of milk, the value of cereal foods, how they should be cooked and how made palatable, the evils of an excessive use of sweet crackers, animal crackers especially; how the frequent use of head to foot ablutions (as Dr. Edwin Chadwick calls these baths) aid in the maintenance of health and the prevention of sickness; how bedrooms and living rooms can be easily ventilated; why garbage and excrement should not remain in and about the house to offend the senses of sight and smell and to poison the atmosphere; why food should not be kept in bedrooms or bathrooms and near water-closets; why diapers and underclothing soiled with urine should not be dried by the fire in the living-room; what is the use of vaccination; how proper preparation and cooking will render certain cheap, coarse and tasteless foods nutritious and palatable.

Some families might ignore or repel these, and other practical suggestions, but many would welcome them. Boards of health can and should see to it that the drinking-water is ample and good, that milk is at least quite pure and not furnished by cows fed on sour garbage or distillery slops, and kept in unhealthful stables; that house garbage is promptly removed; that plumbing is as it should be; that the sewers are properly flushed and disinfected; that contagious diseases are studied and their spread prevented as far as possible by isolation and

notification to the people; that houses are not overcrowded, and that every facility is afforded for the building of model tenements. The hardworking, conscientious health officer has a wonderful opportunity to save life and increase the comfort and usefulness of the people. If the whole of parentage does not consist merely in loving one's child, but in good blood or heredity, proper food, intelligent care and untiring devotion, the more frequently we can use these factors in the management of institutions for children the better, and the smaller will be the mortality. But what do we find in too many institutions? We might say of some of them, as Florence Nightingale did in 1863 of hospitals: "Strange though it seems, it is quite necessary to lay down the principle that the very first requirement in a hospital is that it should do the sick no harm." There is overcrowding—partly because of a desire to outrival in numbers similar institutions, partly because of insufficient means to extend accommodations, and too frequently because of a niggardly economy, which prohibits a proper supply of food, the employment of intelligent and faithful attendants, and the expenditure of sufficient money to provide proper ventilating and bathing facilities. Though many of the inmates of these institutions come from the lower walks of life and may not have had the best of care at their homes, there is no excuse for cutting off a necessary supply of milk—the most valuable food of childhood—because it is agreed that the expense of running the institution must be lessened; neither is it right to have the floors wet or damp a large part of the time, in the attempt to have them clean. On no ground, other than selfishness, can the practice be defended of sending children who are expected to die out of an institution, so that the published death-rate of the institution shall be small. Such action does not prevent death, but often accelerates it. For what, pray, are institutions for children established unless to care for the feeble, sick and dying as well as for those in health, and to give decent burials if necessary? Careless and prolonged bathing of puny infants in cool or damp rooms is responsible for many a death from capillary bronchitis. Hard and uncomfortable beds, often teeming with vermin, a scarcity of towels and handkerchiefs, the placing of children with gastro-enteric affections, it may be, in the same room with babes having purulent ophthalmia, the insistence upon one woman wet-nursing two infants or having charge of fifteen or twenty little children, a job sufficient to tax the energies of three or four women, the persistent and often underhand opposition to the directions of qualified and fair-minded medical attendants, whose sole aim is to diminish by every means possible a high rate of infant mortality—all of these things are hindrances to the maintenance of health. The bane of too many institutions is too many trustees, and there is a clashing of directions.

The late Professor Dunster, in his report of 1870, showed that owing to no overcrowding, fewer epidemics and better hygienic conditions, infant mortality at the Infants' Hospital, Randall's Island, had fallen in 1868, '69 and '70 from 55.06 per cent. to 46.83 per cent., and then to 36.41 per cent. He believes that unpaid labor is very expensive and deprecates pauper labor in such an insti-

tution, for it does not furnish the "unremitting, judicious and proper care that is needed." In this connection it is well to state the conclusions of the late Dr. Elisha Harris (Letter to Investigating Committee of the Board of Supervisors of King's County, etc., 1874): "The private institutions can save 85 per cent. of mothers' infants and 65 per cent. of hired wet-nurse infants as those institutions are now managed, and it is possible to do much better. . . . The mortality in children past 1½ years of age ought not to exceed 5 per cent. in those under 5 years of age and 3 per cent. of those between 5 and 10 years of age. . . . If in any alias nursery the rate of mortality exceeds 22 per cent. of the infants under 1 year, 10 per cent. in the infants between 1 and 2 years of age, and 6 per cent. in those from 2 to 5 years, and over 3 per cent between 5 and 10 years of age, there is some culpable fault somewhere, and such faults are of the kind that make puny children and insure an increase of pauperism and public burdens."

We may conclude from what is known of institutions for children:

1. That a large proportion of the deaths in them are preventable.
2. That the younger the children, and the larger the number, the greater the mortality.
3. That the mortality can be lessened, but the decrease costs money, time, patience and energy, and to obtain the best results the attending and resident physicians should be reliable, should be given control of all medical and sanitary matters, and should be held responsible for the same.

PRACTICAL NOTES.

RECURRENCE OF CANCER OF THE BREAST AFTER AMPUTATION.

From microscopic examinations of carcinomatous mammae amputated by Professor Küster, according to the *Lancet*, Dr. HEIDENHAIN predicted a return of the cancer in twelve cases, because parts of the morbid growth had remained in the wound. In the other cases he diagnosed a radical cure, which diagnosis had proved correct up to the date of the publication of his paper, because the operation had removed the whole of the morbid growth. The usual cause of the recurrence is that only microscopic parts of the gland or the tumor remain on the surface of the pectoralis major. In thin women the whole mammae is firmly attached to the muscle, but in obese subjects small glandular lobules are generally attached to the fascia between the mammae and the muscle, so that in amputation above the muscle small particles of the gland may easily be left. Every mammae in which a single cancer node is found, according to Heidenhain, is largely perhaps *in toto*, diseased. He found the epithelial cells of the acini proliferating in all parts of the mamma, and observed hypertrophy of the per-

iacinous connective tissue, and he believes that these acini remaining in the wound form the origin of the late secondary growths. In the retro-mammary fat there are, side by side with the blood-vessels, lymphatics leading from the mamma to the subjacent fascia, and the latter were, in two-thirds of the cases, full of metastatic cancerous masses. The pectoralis major itself is only affected when a metastatic cancer-node invades the muscle from the fascia, or the original tumor attacks it by its own simple growth. Heidenhain concludes that to make amputation of the mamma more successful it is necessary, even in freely movable carcinomata, not only to remove the whole mamma, but also a superficial layer from the whole of the pectoralis major, and, in tumors which are closely connected with the muscle, to entirely extirpate the latter.—*Boston Med. and Surg. Journal*.

TOBACCO IN FRANCE AND GERMANY.

A congress was recently held in Paris to protest against the abuse of tobacco. Explaining why the German who smokes more than the Frenchman poisons himself less, M. Ortolan said that the percentage of nicotine in tobacco is less when the stalks grow closely together and when the leaves are numerous and placed low on the stalk. Hence, in Germany where tobacco growing is unrestricted, the amount of nicotine is less than in the French tobacco, where the industry is regulated by government and the number of leaves to the stalk is limited. French tobacco contains as much as six per cent. of nicotine.—*The Pharmaceutical Era*.

FOR YELLOW FEVER.

DR. STERNBERG strongly recommends an alkaline treatment. He tried a formula containing 150 grains of bicarbonate of soda and $\frac{3}{16}$ of a grain of corrosive sublimate in a quart of water in twelve cases, and all recovered; while of eight cases otherwise treated in the same Cuban hospital, five died. He gives a small wineglass ($1\frac{3}{4}$ oz.) of this mixture, ice cold, every hour.

PERSISTENT VOMITING.

Persistent vomiting, especially that of pregnancy, is often most difficult to overcome and baffles every effort of the physician; indeed, several fatal cases have been lately reported. Dr. Blumensandt, in *L'Union Médicale*, says that he has found the following formula invaluable in such cases:

R Hydrochlorate of cocaine 3 grs.
Tincture of anise fʒijss.
Spirits of menthol fʒijss.
Linden-flower water fʒv.
Syrup of cinnamon fʒj.

Make into three powders, and give at intervals of one hour.

A dessertspoonful to be given every hour until the vomiting has ceased.—*Med. News*.

CINCHONISM AND MEANS OF PREVENTING IT.

DR. COGLITORE, in the *London Medical Recorder* of August 20th, after enumerating the principal symptoms of poisoning by quinine, says that in cases of toxæmia no good is obtained from various other remedies employed as substitutes for quinine (arsenic, salicin, eucalyptus, etc.). He finds that quinine is always well borne if given with ergotin and opium. This is his formula:

R Sulphate of quinine grs. xij.
Bonjean's ergotin grs. v.
Opium gr. j.

Make into three powders, and give at intervals of one hour.

Given in this manner, quinine succeeds in the gravest cases and gives rise to no symptoms of cinchonism.—*The Medical Age*.

ANTIPYRIN IN CONGESTIVE MALARIAL FEVER.

It is alleged that antipyrin is about to prove an invaluable adjunct to quinine in the treatment of the severest types of malarial fever. From a trial made in a very malarious district of Greece this new use of the drug bids fair to become one of its most beneficial. The significant point in regard to its interaction with quinine seems to be that the antipyrin can be given in the pyrexia, or at any stage when the case is seen. Valuable time may in this way be saved while waiting to introduce the other drug in the advance of the next ensuing pyrexial onset.

MENTHOL IN PRURITIC AFFECTIONS.

Menthol is highly recommended by SAALFELD, Berlin, in cases of pruritics of various kinds. He prescribes it either as a wash or as a salve, the formula being:

1. Menthol 22-37 gr.
Spirit vin. rect. ʒj²₃.
2. Menthol 37 grs.
Ol. Olivarium (ʒij-ʒiij.)
Lanolin ʒj²₃.

Both preparations have done him excellent service in urticaria, pruritus cutaneus and pruritus senilis.

PRESCRIPTIONS FOR THE ADMINISTRATION OF CHLORALAMID.

In the *Therapeutische Monatshefte* for October, DR. A. LANGGARD gives the following formula:

R Chloralamid gr. xl.
Acid. mur. dil. ℥ v.
Syrup. simplex fʒijss.
Aq. dest. fʒij.

This may be taken at one dose.

Used as an enema:

R Chloralamid gr. xl.
Acid mur. dil. ℥ ij.
Alcohol ℥ xv.
Aq. dest. fʒijss.

—*Med. News*, November 30, 1889.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting, April 3, 1889.

THE PRESIDENT, CHARLES E. HAGNER, M.D.,
IN THE CHAIR.

DR. C. H. A. KLEINSCHMIDT presented *Specimen of a Complete Ovary at the Sixth Month of Gestation*.

DR. A. F. A. KING reported the case of

A CHILD EIGHT MONTHS OLD SWALLOWING A
SAFETY-PIN.

On the morning of July 24, 1888, an infant boy, 8½ months of age, swallowed an ordinary metal safety-pin, measuring when closed one and one-sixteenth inches between its rounded ends; when open, the point diverges from the body of the pin five-eighths of an inch. It was opened when swallowed. On the morning of July 28, the rounded end of the pin, opposite the point, began to protrude from the anus, and was extracted by the fingers of the mother.

The mother relates that at the time of the accident she had just removed the pin from the child's clothing and stuck it carelessly in her dress over the neighborhood of her breasts, from whence it fell into the infant's mouth. She stated that the child acted as if he wanted to throw up and "choked as she had never seen him choke before." She passed her finger into the mouth, but could not touch the pin. In the absence of medical advice, a teaspoonful of castor oil was administered and retained. The child had for some months been "bottle fed," and was also allowed to eat bread and milk. A physician (whose name I do not know) ordered the same diet to be continued, adding thereto slipperyelm water as a drink, and directions to keep the child quiet.

The child suffered but little uneasiness until the third day when fretfulness and indications of pain, gradually increased, and got still worse during the night preceeding the fourth morning, when, while having an action from the bowel, the mother discovered the pin and removed it from the anus as previously stated. The infant at once became easy; had a prolonged sleep; and no ill effects have since resulted from the accident.

The case, I think, is of interest, chiefly from the remarkable good luck which determined the pin to keep going right end foremost in its circuitous route through the alimentary canal. As long as the projecting point continued to look backwards, it could pass quite as easily as a copper cent., which latter measures three-fourths of an inch in diameter, and is therefore one-eighth of

an inch wider than the diverging extremities of this open safety-pin.

It is quite probable that the passage of the pin, after it had reached the stomach, was painless, and that the pain and fretfulness during the third and fourth days were produced by the foreign body, impinging upon the sensitive sphincter ani.

If the anus had been explored during the third day, possibly the pin could have been extracted twenty-four hours sooner than it was, and much suffering by the infant and worry of the mother prevented.

I ought, perhaps, to state that I have never seen this child. I had treated the mother, before her marriage, for stenosis of the cervix, and the happy result of Goodell's method of rapid dilatation, after some years of menstrual pain, so impressed the patient, that her first thought, when the child swallowed the pin, was to send to me for advice. I ventured to predict that the pin would probably pass without injury, and told her to do nothing, but assist the exit of the foreign body if it should lodge within the anus. Some weeks later, she wrote me that the pin passed all right, and afterwards at my request, sent me the more prolonged account from which I have gleaned the facts presented in this paper, and which, from my knowledge of the lady, I feel quite sure may be relied upon.

DR. SMITH thought the report of the case introduced a very interesting subject for discussion. Some years ago a child had been brought to his house because it had swallowed a penny; he advised the parents to let it alone; and in a few days the coin was passed from the rectum. A few days ago a doctor brought his own child to Dr. Smith's office, and stated that it had swallowed a metal whistle about an inch in its largest diameter. He advised the father to allow it to pass without administering cathartics, and the foreign body was passed from the rectum the next morning without any discomfort to the patient. He was surprised at this because the diameter of the whistle was so much greater than that of the anus. Some years ago he had been called to see an infant, and learned from the mother, who was greatly distressed, that it had swallowed an ordinary rubber nipple. He did not believe the history, and Dr. W. G. Palmer, who came in while he was there, coincided with this belief. They advised the mother to let the infant alone, and went home. Shortly after they received a message that the nipple had been found on the floor. The important question to determine is whether the child has swallowed a foreign body. In many instances the parents become alarmed because they cannot find articles, and immediately conclude they have been swallowed.

THE PRESIDENT reported a case similar to that reported by Dr. Smith, where a colored child

about 7 years old, had swallowed a whistle. Dr. Gilbert brought the child to his office, and it located the pain about the lower end of the œsophagus. Dr. Hagner passed a probang and felt the foreign body and pushed it into the stomach. As it passed through the cardiac orifice there was a distinct whistle. Some days after it was passed from the rectum without any inconvenience.

DR. THOMPSON had recently seen a boy who had swallowed a whistle. There was no suffering; but he rejected food soon after taking it; and there was a peculiar noise on sleeping. He gave him some water, but it was regurgitated in a few seconds, which led him to believe the foreign body had lodged in the œsophagus. He tried to pass the probang, but the child was so obstreperous that this failed. He told the parents to bring it back again, but as he had not heard from them it was probable that some other doctor had been consulted. Pennies are frequently swallowed. He had removed three from the rectum of a child in the Children's Hospital; they had been there for sometime. It is very singular that so little serious effects result from swallowing foreign bodies.

DR. SOTHORON said that his son had swallowed a whistle, but had not suffered from it although it was about the size of a nickel. He gave him a dose of castor oil and the whistle was passed in about four days. About a year ago he had removed a pin from the rectum of a child; it was located two and a half or three inches from the anus and was at first supposed to be bone.

THE PRESIDENT thought it would be well to consider the removal of foreign bodies lodged in the œsophagus and trachea. If the body is lodged in the œsophagus should it be drawn up, pushed into the stomach, or should cathartics be given? If the feces are solid the body may become surrounded and pass through the alimentary canal without doing any harm; but if the feces are liquefied by cathartics the fluid will pass the foreign body and allow it to lodge in the tract. Consequently he favored the use of constipating food until the body was passed. Sometime ago Dr. Peter brought a patient to him because a foreign body had lodged in the œsophagus. He introduced an umbrella-shaped probang, and removed a large piece of meat through the middle of which was a large pin. How the pin got there no one knew.

DR. CALDWELL: The President in speaking of the inadvisability of cathartics in patients who had swallowed foreign bodies would probably explain a case seen by him sometime ago. The mother stated that the child had swallowed a brass button, and had administered emetics before she sent for him, but the body was not ejected. He did not think the child had swallowed it, but nevertheless ordered several doses of castor oil

without any perceptible effect. In about two weeks the button was passed from the rectum. He now thought the fecal matter was probably liquefied and passed by the foreign body without disturbing it.

DR. J. FORD THOMPSON: Dr. McArdle had seen a case of typhlitic abscess with him sometime ago in a young woman several months' pregnant. He had declined to operate because the woman was dying. At the post-mortem a large black pin with a broad head was found in the appendix, the point having punctured the abscess wall. He had operated to-day for the same condition in a young lady about 20, who had swallowed a piece of a writing pen about seven years ago. He explored the abscess, but could not find any foreign body. Artificial teeth are sometimes swallowed and become impacted in the œsophagus, when it is quite impossible to dislodge them except by œsophagotomy. Usually foreign bodies pass to the lower part of the œsophagus when œsophagotomy is impossible. In such cases gastrotomy would be indicated and is occasionally performed. Many times very large foreign bodies pass through the alimentary tract without doing any harm; on the other hand very small ones, as seeds, pills, etc., will cause obstruction or fatal inflammation.

DR. SAMUEL C. BUSEY reported:

A CASE OF EXOPHTHALMIC GOITRE TREATED
SUCCESSFULLY WITH SULPHURIC
ACID AND STROPHANTHUS.

In the *Medical News* of Nov. 3, 1888, Dr. W. E. Magruder, of Olney, Md., reports the "successful treatment of a case of exophthalmic goitre by sulphuric acid." The case presented the usual symptoms of the disease, "enlargement of the thyroid gland, with decided pulsation, protrusion of the eyeballs, palpitation of the heart, frequent pulse, anæmia, etc." After trial of various remedies usually given in such cases, he prescribed the aromatic sulphuric acid in combination with digitalis and ergot, from which the patient derived much benefit, but in consequence of its disagreement with the stomach, the ergot and digitalis were discontinued, and 20 drops of the aromatic sulphuric acid was given every four hours. Her improvement was more rapid, and finally, a complete cure was effected. Dr. M. attributed the successful result of the treatment to the tonic influence of the acid upon the vasomotor nerves.

In THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of the same date appeared a contribution by Dr. D. R. Brower, of Chicago, entitled "Exophthalmic Goitre, and its treatment by Tincture of Strophanthus," in which he reports several cases treated with this drug, resulting in cure. In one case the patient had been under the ordinary treatment for three months "without any

abatement of the symptoms." In the second case the patient, a female, aged 52, had suffered with the disease for eighteen months. He refers also to a case treated by Dr. Bridge with strophanthus and tonics, with rapid recovery, and to a case in which Dr. Ingals had employed the same remedy with marked benefit.

During the week succeeding the appearance of these reports I was called to see a young lady suffering with the disease. In her case the cardiac and thyroid symptoms were well marked. The exophthalmos was perceptible, but not prominent. It was more marked in the absence of harmony in the movements of the eyeballs and upper lids than in protrusion of the eyeballs. The right side of the thyroid gland was much larger than the left, but the enlargement at the base of the neck compelled her to enlarge her collars and to loosen the neck bands of her clothing. Her pulse was frequent and excitable, complained of palpitation and difficult respiration, especially when ascending steps. Slept badly, sometimes lying awake all night, was nervous, irritable, anæmic, without appetite, constipated, and had a slight cough. In general appearance she looked like one suffering with phthisis pulmonalis. I ordered two drops of the tincture of strophanthus every six hours, and ten drops of aromatic sulphuric acid every four hours, an easily digested and nutritious diet, food to be taken during waking time every four hours, early retirement and remaining indoors during inclement weather and after sunset. The course of treatment was twice interrupted, once by the illness and death of a member of the family, and again by a severe attack of bronchitis, induced by indiscreet exposure in making a visit to the cemetery. Improvement was manifest soon after the beginning of the treatment, and now she seems to be perfectly well, with entire disappearance of the thyroid enlargement. The action of the heart is good, her appetite is excellent, bowels regular, sleeps well, is bright and cheerful. She is vigorous, with rosy cheeks, and a gain of twenty-five pounds in weight.

Whilst the result has been as satisfactory, the progressive improvement in this case was not as rapid as in either of the cases reported by Drs. M. and B., probably because the drugs were not given in as large and increasing doses. The plan of treatment established at the beginning was persistently pursued to the end, with the exception of the interruptions referred to.

DR. W. W. JOHNSTON, in opening the discussion, said: There was probably no disease in which the treatment sometimes accomplished so little good as exophthalmic goitre. The cases may be divided into two classes, viz., first, the subacute, which are the most curable and yield promptly to vigorous treatment, the principal element of which is rest; second, the chronic, which

may be subdivided into two varieties, those which are curable and those which are not. As the successful remedies used are often empirical ones, and those given in obedience to a theory frequently fail. He believed exophthalmic goitre to be a disease of the central nervous system, leading to congestion of the thyroid gland, of the fundus of the eye, and to cardiac disturbances. It is analogous to physiological and other pathological congestions.

The regulating vaso-motor centers are disturbed, leading to local congestion. It is not known why this congestion should take place in the orbit and thyroid, but it follows the disturbance of certain nerves. The lesion is undoubtedly in the medulla oblongata, and acts upon the pneumogastric and vaso-motor nerves. The only effectual remedy to accomplish any good should go to the seat of the disease. As we have no such agent we resort to those which act by relieving the distressing symptoms and local congestions. Hence the use of ergot, which acts upon the pathologically dilated peripheral vessels. Ergot is said to have proved valuable and favorable in the cases reported. Then there are those remedies which act upon the heart by regulating its disturbed action. There must be two distinct pathological conditions, as the thyroid and cardiac symptoms are not always associated, and ergot and heart-calming remedies are both called for. The action of the heart is the most serious symptom, as it disturbs the blood supply to the various organs and enfeebles digestion. In the experiments with strophanthus it has been shown that it slows and then enfeebles the heart's action if it is pushed to its full physiological effect. This slowing of the heart is important, and we may expect more from strophanthus than digitalis.

He had seen quite a number of cases. In one, an acute case, the patient was put to bed and kept quiet; digitalis and ergot were administered and recovery took place in three weeks. In another, a lady, the heart's action was feeble and the exophthalmia marked. Absolute rest was enjoined and ergot and digitalis administered. She recovered and is now well. In another, a female school teacher, all the symptoms were well marked. She was afterwards under the care of Dr. Weir Mitchell who treated her principally by rest and galvanism. She afterwards went to Atlantic City and gained very much in a short time. Rest is the most important part of the treatment, and no method will prove effectual without absolute rest of mind and body. Some patients are irritable, others hysterical, and a few have delusions. In these cases there is some congestion of the brain. Electricity has been warmly advocated by some but had not proved beneficial in his cases, either as a local application or general tonic. He hoped we had found in strophanthus a new and valuable remedy, and thought

it should be pushed until some decided effect was seen, as in small doses it seemed to be of little value.

DR. MURRAY asked Dr. Johnston the duration of treatment in his favorable cases.

DR. JOHNSTON: The cases were subacute and were cured in about six weeks. In some the treatment had extended over several months, but was not persistent. Improvement was steady after rest was secured. Many chronic cases do not get into our hands until numbers of physicians have treated them, so it was impossible to fix the time of their duration under any plan of treatment.

DR. MURRAY had asked the question so that he could compare results and form an idea of the value of the new treatment.

DR. TONER had seen a case of thirty years standing. At first he was hopeful that treatment would prove beneficial, but within two years her condition was unchanged, in spite of continued good health. This was a sister in one of the asylums of the city, and who now lives in South Bend, Ind. One case had recovered in six months. There was considerable heart disturbance, for which he gave digitalis. The man lived in Cumberland, Md., and he had only seen him four times. He was tall, spare and active, with light hair and eyes; and the disease occurred suddenly. Six years after he died of heart disease.

THE PRESIDENT: Would mental worry and anxiety act as exciting causes in production of exophthalmic goitre?

DR. JOHNSTON: Valvular disease of the heart is not present in the beginning of the disease, but is finally produced in those chronic cases in which the heart is subjected to continual strain. In a case reported by Trousseau cirrhosis of the thyroid gland and liver were found: these changes being the ultimate result of long-standing congestion.

DR. MURRAY: It was only a question of time when the heart would become involved. Heart disease usually destroyed life.

DR. BUSEY: In answer to Dr. Bermann's question as to the cause of the disease in his case, said he could not give the cause. She was anæmic, and had been in feeble health for several years. The goitre, however, was not long in developing. As to the noises in the ears, he was aware that they had been mentioned by more than one author; but they were not complained of by his patient. Exophthalmic goitre may exist with or without exophthalmia or heart disease, or one of these phenomena only may exist. The cases differ in degree and symptomatology.

In reply to Dr. Bermann's question he said he did not believe that either strophanthus or digitalis had a cumulative effect; he had been taught that digitalis possessed such quality, but he had

never seen it. The dose of strophanthus is susceptible of being increased until six or eight drops are taken every four hours. He had never given strophanthus in large doses. He believed that it was more variable in strength than digitalis.

Various theories as to the cause of exophthalmic goitre have been advanced, but none of them explain it. The theory of its nervous origin came nearer the truth. Sulphuric acid is not unlike ergot in its action. Hanfield Jones considers it a most valuable tonic to the vaso-motor system.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

The Notification of Infectious Diseases Act—Dr. Jules Simon and the Treatment of Diphtheria—The Pasteur Institute Fund—Hydrochlorate of Pilocarpine in Hystero-Epileptic Attacks—Report of the Royal Commission on Vaccination—Miscellaneous Items.

The Notification of Infectious Diseases Act has now come into operation, compulsorily as regards the metropolis and permissively as regards provincial authorities. Under the provisions of the Act notification must be given, in the case of certain infectious maladies occurring, both by the head of the household (or in his default by various other persons who are enumerated, including finally the occupier of the building), and also by the medical practitioner attending the patient. As the doctor is under a legal compulsion to do his duty in this respect he need not fear that he will give offense to a foolish employer by disclosing family secrets, and moreover, his diligence will be sharpened by the receipt of a small fee from the local authority to whom he makes the formal notification.

Dr. Jules Simon, who has written much on the treatment of diphtheria in young children, has recently visited this country. It appears he is opposed to the use in this disease of mercurials, of chlorate of potash, of borax, of opium and of emetics. The treatment which he advocates is chiefly local and consists of energetic swabbing made every hour with the following solution:

R. Salicylic acid.	0.5 to 0.1 grams.
Alcohol q. s. to dissolve. .	
Glycerine	40 "
Infusion of eucalyptus . .	40 "

The same practitioner also prescribes touching the pseudo-membrane, when very thick and adherent, with a mixture of equal parts of glycerine and perchloride of iron, this application to be made two or three times a day. He also recommends sprays of eucalyptus and of thymol. For nasal diphtheria the application of a mild sulphur

ointment, 1 part to 7, is likewise recommended. To combat the glandular enlargement and engorgement he has the following, well rubbed in:

R. Ext. of belladonna	2 parts.
Iodide of potassium	1 "
Lard	30 "

The patient's room should be kept at a temperature of 59° F., its atmosphere should be constantly renewed, though it is better that the air from outside should enter through another room, not directly from the open air. The patient Dr. Simon keeps in an aromatic and slightly moist atmosphere, obtained by heating alternately, over a spirit lamp, shallow tin dishes containing tar, and others containing encalyptus leaves and water. Copaiba and cubebs seem, he says, to have some specific virtue in this disease and are sometimes prescribed by him as adjuvants. If the larynx is invaded by pseudo-membrane, emetics are pre-prescribed early, and tracheotomy performed as soon as ever the symptoms of asphyxia show themselves.

A meeting of the Committee of the Pasteur Institute Fund has been held at the Mansion House. The Lord Mayor presided and there were present Sir Henry Roscoe, Professor Fleming, Professor Michael Foster, F.R.S., Mr. Ernest Hart, Professor Ray Lankester and Dr. Armand Ruffer. It was unanimously resolved on the motion of Professor Ray Lankester, seconded by Mr. Ernest Hart, "that the Lord Mayor be requested to transmit to M. Pasteur for the use of the Pasteur Institute the sum of 40,000 f., in grateful recognition of the services rendered by him in the successful treatment of more than 200 British subjects bitten by rabid animals, and that the Lord Mayor be desired at the same time to express to M. Pasteur the high appreciation of the subscribers of the great benefits which he has conferred on science and humanity."

Dr. Samuel B. Lyon reports the case of a married woman æt. 30, in whom the convulsive seizures had the characteristics of hystero-epileptic attacks and who was relieved by a hypodermic injection of $\frac{1}{8}$ gr. of hydrochlorate of pilocarpine given over the left ovary. Her temperature, which had been 103.4°, fell to 101.2°. The convulsive movement ceased, consciousness gradually returned and a quiet sleep followed. In this case inhalations of amyl nitrite and ether had only temporarily quieted the spasmodic condition.

The first report of the Royal Commission on Vaccination has just been issued. It contains little else than the minutes of the evidence of four witnesses, Sir John Simon, Dr. W. Ogle, Mr. R. Thorne-Thorne and Dr. Rauch. The Commission began by drawing up a plan of operations which involved the separation of the evidence under six heads. They proposed to begin with the historical and statistical case in favor of vaccination. This will be followed by the arrange-

ment under and administration of the present law, after which inquiry will be made into the case against vaccination and, if continuing to be made compulsory, the reply to those objections and the suggestions of substitutes for the purpose of preventing smallpox. Finally evidence will be taken of suggestions for the improvement of the present law or its administration, with the object of removing objections to vaccination or making it more effective. This programme, when it has been carried out, ought to be conclusive enough to set the disputed points at rest. The report now issued is but a little part of the whole, for the Commissioners say the evidence coming within the first item of their list is not yet ended. So far as it goes, however, there is in that evidence an enormously strong case for vaccination.

At the Pathological Society of London a specimen of non-alcoholic cirrhosis of the liver was shown. The specimen had been taken from the body of a clergyman aged 63, who had been a total abstainer for thirty-seven years. During the last five years of his life he had suffered from repeated attacks of hepatic colic, which lasted for periods of from seven to ten days, and during these attacks he used to pass gall stones and become jaundiced. In the last two years of life the patient had symptoms of angina pectoris, and six weeks before death ascites appeared. At the post-mortem examination the large arteries were found to be hard and atheromatous, particularly the coronary arteries. The liver, upon inspection, presented the ordinary characteristic of cirrhosis, being hobnailed, hard and pale. The gall-bladder was contracted and bound down to the liver substance by dense adhesions. It contained one large stone and several smaller ones. The liver was infiltrated by a very vascular small-celled growth, which had destroyed the lobules by pressure; the connective tissue was entirely interlobular, the liver cells had not undergone any fatty change, nor was there any abnormal development of pigment. It was generally considered that the irritation of the successive gall-stones and obstruction would be sufficient to account for the development of the fibrous tissue.

An anonymous writer has drawn attention to the value of cocaine as a hæmostatic, and states that for three years past he has given subcutaneous injections of hydrochloride of cocaine to produce local anæsthesia, and noticed that little or no bleeding was occasioned. This led him to use charpie imbibed with a solution of cocaine, namely, hydrochloride of cocaine 1 gram, alcohol 5 drops, cherry laural water 5 grams.

Hyoscine, which is taking the place to some extent of hyoscyamine, when injected at the dose of $\frac{1}{8}$ grain subcutaneously, produces calm and induces sleep in maniacs and sufferers from alcoholic delirium.

Sir Joseph Lister and Dr. Priestly will represent the Edinburgh Medico-Chirurgical Society on the committee of the International Congress of Hygiene and Statistics, London, 1891.

Dr. Lauder Brunton, F.R.S., has arrived at Hyderabad to take part in the chloroform investigation.

G. O. M.

NECROLOGY.

Dr. J. K. Bartlett.

Dr. J. K. Bartlett, of Milwaukee, Wis., died at Berkley, Cal., on the 26th of November, 1889, in his 73d year. Born in Portsmouth, N. H., 1816, he entered Yale College in 1834, and graduated from the Medical Department in 1841. In the same year he commenced the practice of his profession among the pioneers of Milwaukee, and remained in active practice for forty-five years. Latterly being the subject of bronchial catarrh and cancer of the lip, in the fall of 1887, he went to California in the hope that a milder climate would benefit his failing health. Some benefit he did derive, but the cancerous affection of the lip made very rapid progress, extending to the tongue and throat the power of speech was lost and death resulted from starvation. The following extract from one of his notes to his attending physician, shows how gladly he counted relief in death: "Weakness is increasing daily, the onward progress towards the dark river appears to hasten, and yet the brink is not in sight. It is well so, for I have some matters to attend to before the plunge." A firm believer in, and a strong advocate of cremation, he directed in his will that his body should be cremated. This was done at Los Angeles, Cal., and the ashes sent to Milwaukee for interment in the family burying ground.

To many members of the American Medical Association, he was well and favorably known. For over a quarter of a century he regularly attended the annual meetings, and took an active part in the proceedings. He served as a member of the Executive Council from the time of its creation until declining health caused him to resign; was vice-president in 1872, and chairman of the Section of Obstetrics, at the Cleveland meeting in 1883, when he delivered an able and scholarly address on the "Progress in Obstetrics and Gynecology." His views as to a higher standard of medical education were very advanced; he was a strong supporter of the Code of Ethics, the teachings of which, in his professional life, he carried out both in the spirit and to the letter. To the last he maintained a keen interest in the Association and the profession, was familiar with all the recent literature, not only in English, but also in French and German, with

both of which he was familiar. In his own State he was equally active in society work, having been instrumental in organizing, at various times, not less than six different societies, all of which are now obsolete with the exception of the Wisconsin State Medical Society. Of this he was an ex-president, for many years a member of the board of censors, and at the time of his decease an honorary member. On leaving Milwaukee, he presented his medical library to a medical club in that city, which now bears his name.

As a practitioner, he was eminently successful—enjoying the confidence of both fellow-practitioners and patients alike. By the former he was eagerly sought after in consultation, and by the latter regarded as their trusted and esteemed friend. Aside from his professional attainments, his acquaintance with general literature was very extensive, as his miscellaneous library gave evidence of. He was one of the corporate members of the Young Men's Association, now merged in the Public Library, was elected president in 1853, and for many years very active in its behalf, as a member of the board of directors.

The very choicest books which belonged to the Association, were many of them of his personal selection, to which work he gave no small amount of his time and labor from 1851 to 1861. He was fond of music, and had no inconsiderable cultivation in the art, and during an early period of his career he was active in musical circles.

BOOK REVIEWS.

THE MEDICAL NEWS VISITING LIST FOR 1889.

This valuable little work has been thoroughly revised, and brought up to date in every respect. Three styles are published as heretofore. The weekly edition is arranged for thirty patients, the monthly edition for 120 patients, is undated and good for any year. The third, or perpetual edition is also undated, and is good for any year.

The method of arrangement is the best that medical men have been able to devise. In short, every need of the physician seems to be anticipated in this last revision of *The Medical News Visiting List*. Each style is in one volume, bound in handsome red leather, with pocket and pencil. Price \$1.25.

THE STORY OF THE BACTERIA AND THEIR RELATIONS TO HEALTH AND DISEASE. By T. MITCHELL PRUDDEN, M.D. 16mo, cloth; pp. 143. New York and London: G. P. Putnam's Sons. 1889.

As may readily be conjectured from the title, this is a book which approaches the border line between science and general literature; indeed, it

really steps over a little way into the territory of the latter, where it will doubtless have a good reception, such as it deserves. One can scarcely imagine a technical, scientific subject treated in a more delightfully interesting manner than this one has been. Dr. Prudden certainly has the faculty of making science racy for non-scientific readers. Although this little book is evidently designed for popular reading, it will be found to be replete with interest for the average medical reader as well.

AN EXPERIMENTAL STUDY IN THE DOMAIN OF HYPNOTISM. By DR. R. VON KRAFFT-EBING, Prof. Psychiatry, University of Graz. Translated from the German by CHAS. G. CRADDOCK, M.D., Assist. Phys. Northern Michigan Asylum., Pp. viii, 129. New York and London: G. P. Putnam's Sons. 1889.

By those who are interested in the subject of hypnotism, a subject, indeed, whose claims to practical importance are being more and more pressed upon the medical profession, this contribution will doubtless be read with attention. It is occupied entirely with an account of a large number of extraordinary experiments performed upon a young Hungarian woman who was unusually susceptible to psychological influences. To the author's mind they afford abundant proof of the correctness of the view that hypnotism does not depend upon so-called animal magnetism, but upon a psychical (moral) influence exercised by the experimenter over the subject. The author congratulates the profession that so important a subject as hypnotism has been taken from the hands of charlatans to be developed by scientific inquiry until it has come to occupy a conspicuous place in the domain of science.

ORIGINAL INVESTIGATIONS OF CATTLE DISEASES IN NEBRASKA—1886-1888. By FRANK S. BILLINGS, while Director of the Patho-Biological Laboratory of the State University of Nebraska. Pp. 280. Lincoln, Neb.: State Journal Co., Printers. 1889.

This volume contains articles on "The Southern Cattle Plague and Yellow Fever," in which the author describes some points of resemblance between the two diseases; an article on "The Corn Stalk Disease;" an article on "The So-called Hydrophobia in Cattle;" an article on "Contagious Inflammation of the Cornea in Cattle;" and an article on "A Singular Disease of the Sexual Organs in Cows."

Dr. Billings' labors are too well known and appreciated both at home and abroad to make any extended description of the character of his work necessary. It is sufficient to say that an immense amount of original investigation is embodied in his publications, all of which bear the stamp of

the enthusiastic observer. The present volume contains a number of excellent colored plates illustrative of pathological and bacteriological features of the diseases considered.

In a final note Dr. Billings alludes to the closing of his work in connection with the State University of Nebraska. It is understood that he has taken up his permanent residence in Chicago, where it is hoped that he will find abundant means of continuing investigations which have proved so valuable to the stock-raising interests of this country.

MISCELLANY.

THE PARIS AWARD.—Among the thousands of exhibitors who have made a display of their wares at the Paris Exposition this year, less than one-half received any award; the remainder received honorable mention, bronze, silver and gold medals, but to a very limited number was the Grand Prize awarded. The Grand Prize was awarded to Nestlé's Milk Food. This is the second occasion on which this great distinction has been conferred on Nestlé's Milk Food.

LETTERS RECEIVED.

Dr. G. H. Simmons, Lincoln, Neb.; E. B. Treat, New York; Dr. W. H. Delong, Pikesville, Pa.; J. H. Bates, New York; Dr. Will. Jennings, Richmond, Ky.; Dr. F. R. Van Kirk, McKeesport, Pa.; Dr. H. F. M. Nary, Princeton, Ky.; D. B. Lefever, Ephrata, Pa.; Dr. F. H. Long, Madison, Neb.; Dr. D. C. Patterson, Washington, D. C.; Dr. G. A. Brodie, Claremont, Ont., Can.; Dr. R. J. Dunglison, Dr. De F. Willard, Philadelphia; Dr. N. White, Chicago; Dr. Samuel S. Adams, Washington, D. C.; Dr. W. W. Jaggard, Chicago; Thos. Leeming & Co., New York; P. Blakiston & Co., Philadelphia; Dr. W. T. Dougan, Vandalia, Mich.; Dr. P. Hooper, William R. Warner & Co., Philadelphia; Dr. A. F. Walter, Gladbrook, Ia.; Dr. Austin Flint, New York; A. H. Roffe & Co., Boston; Long Island College Hospital, Brooklyn, N. Y.; T. W. Hannaford, London, Eng.; Dr. J. E. Clark, Detroit, Mich.; Trübner & Co., London, Eng.; Dr. L. Turnbull, Philadelphia; Dr. A. Holton, Harker's Corner, Ill.; Dr. Wolfred Nelson, New York; Dr. C. A. Foulke, Argentine, Kan.; Dr. Daniel LaPerte, Detroit, Mich.; Journal of Cutaneous and Genito-Urinary Diseases, New York; Dr. D. C. Newman, Pasadena, Cal.; Dr. Frances E. White, Philadelphia; Dr. A. J. Simontof, Spokane Falls, Wash.; Dr. Charles B. Petrie, Mound City, Ill.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from November 23, 1889, to November 29, 1889.

By direction of the Secretary of War, the extension of leave of absence granted Capt. Valery Havard, Asst. Surgeon, in S. O. 240, October 15, 1889, from this office, is further extended one month. Par. 1, S. O. 272, A. G. O., November 21, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 30, 1889.

Medical Director F. M. Gunnell, placed on the retired list. November 27, 1889.
Surgeon J. H. Gaines, ordered to duty at Army and Navy Hospital, Hot Springs, Ark.

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ORIGINAL ARTICLES.

THE ETIOLOGY OF TYPHOID FEVER.

Read in the Section of the Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY VICTOR C. VAUGHAN, M.D.,
OF ANN ARBOR, MICH.

Mr. Chairman and Gentlemen of the Section:—
As my time is limited I shall waste no words in introductory remarks, but shall endeavor to get at the gist of my subject immediately. In 1880 Prof. C. J. Eberth, of Zurich, in eighteen out of forty cases of typhoid fever, found in sections of the spleen and mesenteric glands a bacillus which is distinguished from the ordinary putrefactive bacilli by the difficulty with which it takes up the aniline stains. At the same time Eberth reported that in twenty-four similar examinations of those dead from other diseases he was unable to detect this bacillus. From these facts the distinguished Swiss investigator thought himself entitled to claim that he had discovered the true germ of typhoid fever. Even before Eberth's report appeared, Koch had seen and photographed the same bacillus, so that this germ is by some called the Eberth bacillus and by others the Koch-Eberth bacillus. For the sake of brevity, and without expressing any opinion as to the priority of discovery, I shall in the subsequent pages refer to this microorganism as Eberth's germ or Eberth's bacillus.

This organism is now generally regarded as the true cause of typhoid fever, and I shall give my attention first to the grounds upon which this belief is founded. Has it been conclusively demonstrated that the Eberth germ is the sole and sufficient cause of typhoid fever? To what extent have the four rules of Koch been complied with in the study of this germ? Are there any reasons, outside of these rules, for founding a belief either for or against the specific nature of this bacillus?

In the first place, is this organism found invariably in typhoid fever? As has been stated, in his first report Eberth found it in eighteen out of forty cases; but since that time methods have been perfected and many other investigators have

studied this point. In the examination of twenty-eight bodies dead from typhoid fever Gaffky found the Eberth germ in twenty-six; Fränkel and Simmonds reported it in twenty-five out of twenty-nine cases; Seitz in twenty-two out of twenty-four; Rietsch in thirty-five out of thirty-six, and Kowalski found it present in each of twenty-nine cases.

Without citing further authorities I may say that the number of cases of genuine typhoid fever in which this germ has not been found, when the examinations have been made by competent men, is so small that we are justified in claiming that the first of Koch's rules has been complied with. Indeed, in reading over the great number of cases referred to in the volumes of Baumgarten's "Jahresbericht," in which the Eberth germ has been reported to be present, one becomes somewhat suspicious of the universality and readiness with which this organism has been detected. Gaffky and others found it always present in the mesenteric glands and spleen, often in the liver, and not so frequently in the kidney. In the intestine it has been found in the early stages in the swollen follicles and plaques and in the deeper layers, before there is any necrosis; but with the advent of ulceration there is found secondary invasion. But in addition to these organs, the Eberth germ has been reported by Chantemesse and Vidal in the lungs of typhoid patients with bronchitis, broncho-pneumonia and pneumonia. The same observers report the germ in the brain, Curschmann in the spinal cord, Zenker and Hoffmann in the voluntary muscles and in the marrow of the bones, and Reher, Neuhauss and Chantemesse and Vidal in the placenta of typhoid patients. In twenty samples of blood taken from the finger, during life, of typhoid patients, Meisels reports the finding of this germ in nineteen. Neuhauss examined the blood taken from the eruptive spots in typhoid fever with success. Maragliano and others examine the blood taken from the spleen during life as a means of diagnosis. The Eberth germ has been found in drinking water by Dreyfuss, Brisac and Vidal, Michael, Noers, Chantemesse, Loir, Thoinot, de Blasi, Galbucci, Beumer, and others. Granting that these observers have not been mistaken in the nature of the germs which they have found,

we must admit that the Eberth germ is widely distributed.

That the second of Koch's rules has been complied with there is no doubt. Pure cultures of this germ are to be found in every bacteriological laboratory. It grows readily in our artificial media, and its characteristics of growth are well known.

The attempts which have been made to induce the disease in the lower animals by inoculation with this germ are numerous and interesting. I shall not attempt to review all of these, but will call your attention to some of the more important ones. The first to experiment with pure cultures was Gaffky. To five Java apes he fed daily cultures without any results. Later these animals died of tuberculosis, and section showed no lesions resembling those of typhoid fever. Equally without result were two other experiments upon apes, in one, the inoculation being made directly into the blood, and in the other, in the tissues over the sternum. Gaffky also inoculated rabbits, Guinea pigs, rats, mice, pigeons, a chicken and a calf—all without result. In these the inoculations were made directly into the blood vessels or into the peritoneal cavity.

The experiments of E. Fränkel and Simmonds seemed at first to prove that the Eberth bacillus is pathogenic to some of the lower animals. These experimenters suspended the germ taken from potato cultures in sterilized water and injected this either directly into the blood or into the peritoneal cavity. Nineteen out of thirty-two rabbits and twenty-seven out of thirty-one mice succumbed to this treatment. These animals survived the injections from a few hours to four days, the majority dying on the first day. The symptoms observed consisted of lessened response to surroundings, lessened inclination to move, loss of appetite and, in many, diarrhoeal discharges. Section showed enlargement of the spleen and mesenteric glands, and swelling of the intestinal follicles. In some there were observed enlargement of the axillary and inguinal glands, ecchymoses of serous membranes, inflammatory redness and hæmorrhage in parts of the intestines and parenchymatous swelling of the liver and kidneys. In no case was there suppuration at the point of inoculation. In the spleen, mesenteric glands, liver, kidneys and Peyer's patches the bacillus could be detected. However, the abundance of the bacilli did not correspond with the extent of the macroscopic changes. From these experiments Fränkel and Simmonds concluded that they had successfully transmitted typhoid fever to these animals.

Independently of the above, Di Vesta inoculated with fatal results rabbits and Guinea-pigs. The lesions were not so marked as those found by the Hamburg investigators. Later, A. Fränkel inoculated Guinea-pigs with the Eberth germ after

the manner employed by Nicati and Rietsch in their experiments with the cholera bacillus, and which consists in introducing the germ directly into the duodenum, either with or without ligation of the bile duct. Of the fourteen animals thus treated seven died. The anatomical changes observed were similar to those found by E. Fränkel and Simmonds.

Seitz, employing Koch's method for producing cholera in Guinea-pigs, found that seven out of sixteen animals died within forty-eight hours, and one other after four days. The germ could be detected in the intestines, but not in other organs. Intravenous and intraperitoneal injections of the germ produced results similar to those obtained by E. Fränkel and Simmonds.

Beumer and Peiper confirm the observations made by E. Fränkel and Simmonds, and A. Fränkel and Seitz, but interpret their results in a wholly different way and reach a diametrically opposite conclusion. In the first place they find that the effect upon the animal is in direct proportion to the amount of the culture injected; an amount which is small, but which still contains many thousand germs, fails to produce any symptoms. Secondly, they prove that the Eberth germ does not multiply in the body of the animal, but, on the contrary, soon dies. Thirdly, they show that the same symptoms and identical structural changes result from injecting like amounts of certain well-known non-pathogenic bacteria, such as bacillus subtilis, the greenish-yellow liquefying bacillus of water, the white bacillus of water, and others. Thus they show that the death of the animals is due to intoxication, and not to infection; also, that the intoxication is not specific, inasmuch as it is produced with equal facility with other bacteria.

Finally Sirotonin demonstrates that the same symptoms and pathological lesions are produced by sterilized and non-sterilized cultures of the Eberth germ. This completes the proof that the effects observed are not due to the growth of the germ within the body.

To sum up the evidence which we have upon this point, we may say: (1) The Eberth germ is found invariably in the bodies of those dead from typhoid fever. (2) It has been isolated and grown in pure cultures. (3) All attempts to induce typhoid fever in the lower animals by inoculation with this germ have so far been without success. (4) Experiments show not only that the germ fails to multiply in the lower animals, but that, when introduced by inoculation, it soon dies.

I think that every bacteriologist will agree with me in the conclusions which I have just stated; but the bacteriologist stops here and says: "The lower animals do not have typhoid fever, and we must not conclude from the failure to induce this disease in them with Eberth's germ

that this bacillus is not the true cause of typhoid fever." "If we could experiment upon man," says he, "I have no doubt that we would be successful." For these reasons I wish to discuss this germ from the standpoint of the chemist. I think that it is now time for us to supplement the rules of Koch with the following, which should be insisted upon in those cases in which the lower animals are not susceptible to the action of the germ: Before any microörganism can be considered the true and sufficient cause of a given disease, it must be shown that the chemical products of that germ are capable of producing the characteristic symptoms and lesions of that disease in an acute form. Thus, Hoffa has obtained from anthrax cultures chemical substances which cause death, preceded by the symptoms of anthrax. Brieger induces tetanus with the ptomaines produced by the growth of the tetanus bacillus; and, moreover, he has isolated the chemical poison from the tissue of a man with lock-jaw, thus overthrowing the criticism made by Baumgarten that it had not been demonstrated that ptomaines are formed in the living body.

Judged by this chemical test, what can we say about the causal relation of the Eberth bacillus to typhoid fever? Does this germ produce any chemical substance which markedly elevates the temperature, such as mydaine, or any which induces local inflammatory and necrotic changes in the tissue, such as cadaverine and putrescine? The typhotoxine of Brieger has no such action. It is true that it is poisonous, but it induces neither the symptoms nor the lesions of typhoid fever. Recent extended researches by Brieger on this point failed to discover in cultures of the Eberth germ any real typhoid poison.

With the above facts in view we certainly can not say that the Eberth germ has been demonstrated to be the true and sufficient cause of typhoid fever. The best that we can do is to give the Scotch verdict of "not proven." Brieger is inclined to the opinion that Eberth's germ plays a secondary rôle in the causation of this disease, and in this opinion I am forced, from the evidence at hand at present, to concur.

Flügge says: "Inoculation experiments with both typhoid dejections and pure cultures of the Eberth bacillus have universally been without success. The few experiments in which a typhoid disease has followed inoculation or feeding have been made with impure material containing other active bacteria. It is known that a group of widely distributed organisms, which, however, are wholly different from the typhoid bacillus, have the power, when injected subcutaneously or intravenously, of producing in animals death, with marked swelling and ulceration of Peyer's patches. To these organisms, undoubtedly, are due the apparently positive results which some authors have supposed to be due to inoculation with the typhoid bacillus."

Since there seems to be very good reasons for regarding typhoid fever as due to mixed infection, it may not be without interest to inquire briefly into some of the experiments made with impure cultures or with germs other than that of Eberth.

All the experiments made by Murchison, Klein and Bahrdt, by feeding with typhoid stools, and those made by Motschutkoffski and Walder, by inoculation with the blood of typhoid patients, were without success. However, Birch-Hirschfeld, by feeding rabbits large quantities of the stools, induced a continued fever, loss of flesh, and diarrhoea. Post-mortem examination showed enlargement of the spleen, swelling of the intestinal follicles, and, in two instances, ulceration of Peyer's patches.

In 1881 Brautlecht reported experiments which he made with organisms obtained from drinking water which had been used by many who subsequently suffered from typhoid fever. Rabbits inoculated with cultures of these germs had some elevation of temperature, lost flesh until they became mere skeletons, and died after from two to eight weeks. Very young animals died within two or three days, after having profuse diarrhoeal discharges. Post-mortem examination showed in the adult animals invariably a severe catarrh of the small intestines and marked enlargement and coloration of the spleen and mesenteric glands. The walls of the intestines were thickened and friable, the mucous membrane swollen, yellowish and reticulated; ulceration was present in some cases, but was generally confined to individual glands. In sixty-nine experiments there was only one in which there was extensive necrosis. Inflammation and abscesses at the point of inoculation were not observed. It should be stated that the inoculations were made subcutaneously. Infection through the stomach was successful in only a few. The first symptoms to appear in these was diarrhoea. Subsequent cultures of these germs lost their virulence.

At the Cincinnati meeting I made a verbal report to this Section upon some work done by Novy and myself, and asked that we be given more time, in order to repeat our experiments. We obtained from drinking water from Iron Mountain, Mich., where there had been a severe epidemic of typhoid fever, a germ which we could not distinguish, by the microscopical appearance, reactions with staining reagents, and growths in gelatine tubes and on potatoes, from the Eberth bacillus.

March 5, 1888, we inoculated three dogs with this germ, taken from a beef-broth culture twenty days old. The germs were washed with sterilized water, then suspended in the same menstruum and injected into the peritoneal cavity, all precautions, such as shaving off the hair, washing first with a solution of bichloride of mercury and

then with alcohol, having been taken; and I may say here that neither at the point of inoculation nor anywhere else in the animals was there at any time any evidence of septicæmia. The dogs were placed in a large cage with a fourth one, which was employed as a control. For some four or five days after the inoculations we took the temperature of the animals daily, but there being no variation beyond the normal limits we supposed the experiment to be negative, and neither of us visited the animal room until the 2d of April, twenty-eight days after the inoculation, when the janitor told us that one of the dogs had died and the two others had grown very thin and seemed to be sick. A post-mortem examination surprised us by revealing very prominently some of the lesions of typhoid fever. The animal was very much emaciated. I asked Drs. Hendricks and Brewer to make the post-mortem, and the following is their report on the same: "The weight of the body was 20 pounds. Upon the abdominal cavity being opened, the mesenteric fat was observed to be pink, with hæmorrhagic spots. The blood vessels of the intestines were found to be highly injected, with numerous points of hæmorrhagic infiltration. On the mesentery near the cæcum were large hæmorrhagic spots. The lower inch and a half of the ileum was distended and covered externally with clotted blood. The mesenteric glands were enlarged to four or five times their normal size, and each contained numerous hæmorrhagic spots. The glands of the vermiform appendix were much enlarged and were pitted in the centre. Under the mesentery of the cæcum was a plastic exudate, almost transparent. The descending portion of the duodenum showed numerous bright hæmorrhagic spots along the line of its junction with the mesentery. Along the upper portion of the ileum the intestine presented a greenish macerated appearance and a soft, pultaceous feel. Air blown into the intestine escaped through the walls at this point. The mucous membrane of the ileum was swollen and Peyer's patches enlarged, but there were no distinct ulcerations. The liver was indurated and of a deep cherry color; weight, 23 ounces. The kidneys were enlarged to twice the normal size and were dark in color. The spleen was enlarged and of a dark purple color. The stomach was contracted and its mucous membrane showed a few hæmorrhagic spots. The lungs were normal and the heart in diastole and free from clots. The thymus and lymphatic glands were enlarged."

I regret exceedingly that we made no attempt to obtain cultures from the mesenteric glands or spleen of this animal.

The next day we began to take the temperature of the other dogs, with the following results:

		No. 2.	No. 3.	Control.
April 3,	2:00 P.M.	105.0	103.8	100.8
April 3,	5:30 P.M.	105.6	104.4	100.4
April 4,	9:00 A.M.	102.8	104.6	100.8
April 4,	3:30 P.M.	103.0	105.0	101.2
April 5,	10:00 A.M.	105.0	103.8	101.4
April 5,	2:30 P.M.	104.0	103.8	101.7
April 6,	9:30 A.M.	105.6	104.8	101.4
April 6,	3:00 P.M.	106.0	106.2	101.6
April 7,	2:30 P.M.	106.8	105.0	101.0
April 7,	7:30 P.M.	106.8	105.2	101.0
April 8,	11:30 A.M.		104.0	101.4
April 8,	6:00 P.M.		104.2	101.0
April 9,	10:00 A.M.		101.0	101.0
April 9,	6:00 P.M.		101.0	101.5

During the night of April 7th No. 2 died. The post-mortem revealed practically the same condition as found in No. 1, save that there was no perforation of the intestines. As is seen from the above figures, No. 3 had no fever on April 9th, and remained in apparent health as long as he was under observation, which was until June 18th.

Twelve other dogs were inoculated April 18th with a subsequent culture of this organism. In four out of the twelve the temperature at the end of the first week registered between 104 and 105 degrees; by the close of the second week it had fallen to 103 degrees, and during the next week became normal and remained so. In each of three others the highest temperature reached was 103.5 degrees. The others were not apparently affected. Not only did the germ thus seem to lose its virulence, but it soon failed to grow in the culture tubes and died out altogether.

Notwithstanding the marked resemblance of our cultures to those of the Eberth germ, I must conclude from the effects obtained that we either had a wholly different organism or an impure culture.

Now, I do not know that these experiments can be considered of any special importance, but, taken together with those of Brautlecht, I think that they give encouragement for further experiments with microorganisms which may be obtained from the drinking water used by those who have typhoid fever.

During the past six months I have spent four or five hours a day upon the study of the etiology of typhoid fever, approaching the work from a wholly different standpoint from that indicated in the preceding pages. I began last December a chemical study of typhoid stools with especial reference to the presence of ptomaines in the same. However, I soon met with great difficulty. In the first place, it was not easy to always have at hand material in sufficient quantity, and although friends practicing where epidemics of the disease existed kindly took the trouble to endeavor to supply me, this difficulty alone was sufficient to cause me to alter my plans. Moreover, the coloring matter present was taken up by my solvents and it proved no light task to exclude them.

I finally adopted the following method: The

stools were received directly from the patient in a sterilized vessel. With a sterilized platinum needle flasks of meat broth previously sterilized were inoculated with these stools. These flasks were then kept at a constant temperature of from 38° to 40° C. for varying periods of time, after which I attempted to isolate any ptomaines that might be present. Thus, it will be seen that I worked with a mixed culture containing all the germs present in the fæces; the object being to ascertain whether or not the basic substance or substances formed in such cultures would differ from the ptomaine of Eberth's bacillus.

The method of isolating the ptomaine was as follows: After the cultures on meat broth had been kept in the incubator at the temperature of from 38° to 40° C. for from ten to twenty days they were filtered and rendered feebly acid with hydrochloric acid. I may say here that the cultures were invariably ammoniacal. The acidified filtrate was then evaporated to dryness, or as nearly to dryness as could be done, on the water bath. The residue was extracted with absolute alcohol, the extract precipitated with an alcoholic solution of mercuric chloride, saturated at the temperature of the water bath, the precipitate was collected, washed with alcohol, suspended in distilled water, and decomposed with hydrogen sulphide. The mercuric sulphide was removed by filtration, the filtrate evaporated to dryness on the water bath and this residue extracted with absolute alcohol, the extract precipitated with a solution of platinum chloride in absolute alcohol, the precipitate collected, washed with absolute alcohol and dissolved in distilled water. The aqueous solution was concentrated on the water bath until the platinum compounds began to crystallize out. This aqueous solution contains two or more platinum compounds, but so far I have given my attention to only one of them. This forms in rhombic prisms, which are purified by repeated resolution and recrystallization. For purposes of physiological experimentation, this platinum salt was decomposed with hydrogen sulphide and the filtrate concentrated nearly to dryness on the water bath, when the crystals which I now show you form. This is the hydrochloride of the ptomaine.

The following experiments show the action of this ptomaine: February 6, 1889. An aqueous solution, neutral in reaction, of this ptomaine was injected under the skin over the abdomen at 2:50 P.M. The temperature of the rectum before the injection was 100.5° . At 3:35 the temperature was 102.6° , at 4:10, 103.2° . About this time severe purging set in and continued with intermissions and prolonged straining for an hour. At 4:35 the temperature was 103.4° ; at 5, 103.9° ; at 5:30, 104° ; at 6, 103.9° . The temperature was not taken again until 9 A.M. February 7, when it was found to be 102° ; at 12, 101.9° ; at 6 P.M.

100.5° . Between 2:50 P.M. and 5:30 P.M., or within two hours and forty minutes, the temperature of this animal went up 3.5° . The straining and purging were also marked.

May 18, 1889, I gave by the mouth an aqueous solution of the crystals to a dog which weighed 15 lbs. The rectal temperature before the administration of the poison was 101° , the time of administration, 3 P.M. At 3:15 retching and vomiting set in and continued at intervals for more than two hours. At 3:30 the temperature was 103° , an elevation of 2° within one half-hour. At 3:55 the animal began to purge. The first discharges contained much fæcal matter, but the subsequent ones were watery and some of them contained mucus plainly stained with blood. At 4, the temperature was 103.5° , and remained the same at 4:30. The animal was not seen again until 10 A.M. the next day, when its temperature was 100.5° and recovery seemed complete.

I have records of other experiments with this ptomaine, but as they are repetitions of the above in general, I will not detail any more at present.

I should not place any great stress upon the elevation of temperature were that the only symptom, but when taken with the gastro-intestinal disturbance I think that I have some reason for hoping that the discovery of this ptomaine may prove of value in elucidating the etiology of typhoid fever. Of course, further experimentation is necessary. It remains to be seen whether or not typhoid stools invariably contain germs capable of producing this chemical product, also whether or not the same germs are contained in normal stools or in those of any other disease than typhoid fever. Moreover, I hope by means of making plate cultures to determine whether this ptomaine is the result of the activity of a single germ or of two or more microorganisms. I may say that the stools used in these experiments were from undoubted cases of typhoid fever and from three widely separated outbreaks of the disease.

Some of the conditions influencing the formation of this poison may be of interest. It was found most abundantly when the cultures were kept at a temperature of 40° C. for a period of ten days. After this time the amount of the yield grows less, though I have found traces after twenty days. I obtained larger quantities from cultures made on pork broth than from those made upon beef broth, though the poison was never absent from the latter. From 6 quarts of pork broth I obtained as the greatest yield nearly 2 grams of the platinum compound. Though I have made several partial ultimate analyses of the platino-chloride I am not yet ready to give a formula for this base, nor do I care to propose a name for it at the present.

The platino-chloride crystallizes in fine rhombic prisms and the hydro-chloride in the red needles which I have shown you. The red color seems

to be inherent to the substance and not due to impurities. The hydro-chloride obtained from the decomposition of the mercury compound has the same color as that from the platinum compound.

The mercury and platinum compounds are insoluble in absolute alcohol, soluble in water. The hydro-chloride is soluble in both water and alcohol.

DR. WELCH said that he must protest against accepting one condition which Dr. Vaughan formulated, viz.: that before we admit that a given microörganism is the cause of a disease we must isolate from cultures of this organism chemical products which are capable, by inoculation or feeding, of producing the symptoms of this disease. It is certainly an important addition to our knowledge of a disease to become acquainted with such chemical products, but this is not essential to a belief in the causative agency of a specific microörganism. If Dr. Vaughan's condition be accepted as an essential link in the chain in proof, then we have not sufficient evidence that many recognized infectious organisms, such as the spirillum of relapsing fever, the bacillus of leprosy, or even the tubercle bacillus, are the causes of their respective diseases. From our present knowledge we are justified in believing that a microörganism which is invariably associated with a disease, which is found in the lesions of the disease and in situations which explain the symptoms and lesions, and which is never found except in association with the disease, must be regarded as the cause of the disease. When in addition to this we are able, by experiments on animals, to reproduce the disease by inoculation of pure cultures, this additional proof is most welcome, but in many infectious diseases we cannot furnish this last method of proof, either because we have not been able to isolate and cultivate the suspected organism, as is the case with relapsing fever, or because animals available for experiment are not susceptible to the disease, as seems to be true of typhoid fever and cholera. For this reason Koch has stated that it is not absolutely necessary that we reproduce the disease experimentally in animals by inoculation before we admit that a given organism found associated with a disease under the conditions stated is the specific cause of the disease. The evidence Dr. Welch believed to be conclusive that the typhoid bacillus is the specific cause of typhoid fever.

Dr. Vaughan's emphasis of the necessity of demonstrating the chemical products of pathogenic microörganisms before we accept their etiological significance, is based upon the assumption that infectious organisms produce their disastrous effects solely by their chemical products, but this assumption is quite unwarrantable. In fact, there is reason to believe that, while some pathogenic organisms act by chemical products, others do not so act.

As Dr. Vaughan himself is doubtful as to the interpretation of his experiments on dogs, Dr. Welch is not inclined to attribute to them any bearing upon the etiology of typhoid fever, without further information than we now possess.

Dr. Vaughan is to be congratulated upon the isolation from typhoid stools of a definite crystalline substance with such interesting properties; but, as Dr. Vaughan himself has stated, it will be necessary to make control chemical observations with diarrhoeal or other stools not derived from typhoid patients, before the relation of this substance to typhoid fever becomes clear.

DR. TYSON believed in the truth of the original idea that to establish the specific nature of an organism it is necessary to find it in the blood, that it shall be capable of producing the disease in another creature, and that it shall be here also found. This would seem at least conclusive proof. It seems much a matter of mental constitution how much of these views we accept.

DR. WILSON said that Dr. Vaughan had not claimed that his discoveries had been definitely established. He should certainly be thanked for the manner in which he is working out the difficult task which he has undertaken. Our knowledge of infectious diseases has been acquired by slow stages. Nothing has been revealed by the clinician; scarcely more by the pathologist. The bacteriologist has brought our knowledge a tremendous stadium forward. But there are wide lacunæ that are still obscure and waste. We should be very grateful to the bacteriological chemist for his efforts to help us. There is uncleaned ground, and every just hypothesis, no matter how repugnant, should be gratefully welcomed.

DR. VAUGHAN, in closing the discussion, said: I will give my attention wholly to the criticism of Prof. Welch. Prof. Welch says that the first of Koch's rules is all that is necessary in order to prove that a given germ is the cause of a disease. In other words, because you find Eberth's germ in every case of typhoid fever, it must be the cause of that disease. He does not think that all the failures to induce the disease by inoculation with this germ are of any significance. When Koch first promulgated his four rules and pronounced that they must be complied with before the causal relation of a germ to a disease should be considered as demonstrated, the scientific accuracy of such a demonstration won the confidence of the medical world. Now, Professor Welch says that three of these four rules are unnecessary. He claims that the presence of the Eberth germ in the altered tissue of typhoid tissue is a proof that these germs cause typhoid fever. How does he know that the presence of the germ is the cause and not the result of the disease? He reaches this conclusion by reasoning from analogy. This kind of reasoning may have its value, but it is not scientific. Sup-

pose that an inhabitant of some far off planet should, by means of optical instruments, be able to discern the inhabitants of a certain portion of this globe. Suppose that the portion of this globe which should fall under his observation to be the frigid zone. Here he would find the inhabitants living in houses built of snow and ice, and reasoning by analogy he might conclude that all the inhabitants of the earth live in houses of this kind. The reasoning of Prof. Welch is just as unscientific as that in the supposed case of our planetary observer. Condensed, his reasoning would be about as follows: 1. The bacillus of consumption is found in every case of consumption and the Eberth germ is found in every case of typhoid fever. 2. The bacillus of tuberculosis has been demonstrated to be the cause of consumption. 3. Therefore, the Eberth germ is the cause of typhoid fever.

RAYNAUD'S DISEASE.

Read in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortyeth Annual Meeting of the American Medical Association, June, 1889.

BY G. M. GARLAND, M.D.,
OF BOSTON.

Death and mortification of a member of the living body, without external injury, were formerly classified under the one head of spontaneous gangrene and considered mysterious visitations. It was thought obstructions to the circulation might be the cause of these strange conditions, and on the other hand, Quesnay (1749) was the first to suggest that gangrene might result from disturbances of nerve function, and he endeavored to establish this theory by nerve sections upon animals.

The matter rested here for many years, until, in 1832, V. François revived interest by an attempt to prove that gangrene may be produced by the influence of the nerves upon the blood-vessels. Then came Virchow's celebrated elucidation of the difficult problems of thrombosis and embolism and his declaration that the term *spontaneous gangrene* was rapidly falling into disuse with the clearer understanding of the arterial and venous service. Virchow found cases, however, which did not fall into the category of "arterial obstruction," and notable among such, the gangrene of ergotism. Moreover, there appeared now and then rare forms of gangrene wherein symmetrical parts of the body were affected. This eccentric group of cases received special attention from Zambecco (1857), Racle (1859), Samuel (1860) and Raynaud (1862).

In recognition of the valuable work of Raynaud in collecting together and critically analyzing all the reported cases of *symmetrical gangrene*, and thereby differentiating a distinct type, this affection has been termed "Raynaud's Disease." In

his famous thesis (1862) Raynaud says: "I propose to demonstrate that there exists a variety of dry gangrene affecting the extremities which it is impossible to explain by a vascular obliteration—a variety characterized especially by a remarkable tendency to symmetry, so that it always affects similar parts, the two upper or lower limbs, or the four at the same time. Further, in certain cases, the nose and the ears; and I hope to prove that this kind of gangrene has its cause in a vice of innervation of the capillary vessels." Weiss defines the disease as a neurosis which "manifests itself through various vasomotor, trophic and sensory disturbances, and acquires a peculiar type through a gangrene which appears very often on symmetrical parts of the hands and feet, and more rarely upon other parts of the body."

All cases of this disease do not advance to gangrene, and therefore Raynaud has divided the trouble into three stages as follows:

The first stage is termed *local syncope*. Certain parts of the body, more often the toes and fingers, turn to a waxy, cadaverous color, and the latter are familiarly called "dead fingers—*digiti mortui*." The sensibility is notably diminished and movement is hindered. The skin becomes wrinkled. Subjectively the patient may have simply an indescribable feeling that something is going wrong in the part, or there may be a sensation as if the parts were going to sleep, or light shooting pains may occur. The temperature of the parts affected is notably lowered, as shown by the following tables by Mills:

MILLS' OWN FINGERS.

Right thumb, 93.8° F.; left thumb, 93.2° F.
Right index finger, 92° F.; left index finger, 92.3° F.
Right middle finger, 92.8° F.; left middle finger, 92.7° F.

THE PATIENT'S FINGERS.

Right thumb, 85.1° F.; left thumb, 86° F.
Right index finger, 86.9° F.; left index finger, 84.2° F.
Right middle finger, 85.1° F.; left middle finger, 87.8° F.

The return to the normal state is accompanied by light prickling sensations. The only illustration of this stage which I have seen is in the person of my own uncle, an old gentleman of 78 years. During cool weather for the last few years, he has had great difficulty in preventing several of his fingers from freezing. Whenever he goes out of doors, these fingers become like dead members and he must resort to vigorous rubbing to restore them to the normal.

The second stage is termed *local asphyxia*, and consists of "recurrent paroxysmal attacks of blueness of symmetrical extremities of the body, with return, during the intervals, to a perfectly normal condition" (Barlow). This stage may be sequent to the first or it may develop directly from the normal condition. The part turns dark red, and then gradually blue and black. Sometimes the color is a lead gray or slate. The pain is moderate and may require opiates, but it is not equal to

the pain of gangrene. The return of the color and local temperature to normal may be very rapid, as seen in the following table of Hoesslin:

RIGHT HAND.			
6:55	o'clock,	temp. 24.5° C.	Cyanosis still marked.
7:10	"	29° "	Cyanosis disappeared.
7:15	"	33.8° "	Hand scarlet red.
7:18	"	35° "	
7:21	"	35.5° "	

The following case by Dr. Barlow will serve to illustrate this phase of the disease:

Girl 5 years old. The whole of the right foot and ankle and the leg for a distance of 3 or 4 inches up had become within a short time cold and of a nearly uniform grayish color. The child whimpered a little with pain in the foot and did not like to have it handled much. On the dorsal surface of each forearm there was an area of perhaps 3 inches in length, of ill-defined blueness and coldness. This slight blue area was more marked on the right than on the left side. The blueness passed away within an hour or two. Two days after, the child had another attack in the presence of Dr. Barlow. There was slight blueness and coldness of the left foot, and the child whimpered a little but was able to walk across the ward with a slight limp, and the foot became natural again in less than half an hour and she had no further trouble. She was out the next day. The attacks were confined to cold weather but came on indoors occasionally, and sometimes commenced with gaping and complaint of sickness.

The third stage is the *symmetrical gangrene*, so called, which usually develops out of the asphyxiated condition. A person may have numerous attacks of local asphyxia and recoveries before gangrene occurs, or the third stage may follow the first attack. The gangrene is usually of the dry, mummified type, and may go on to spontaneous amputation in ten days. Raynaud says he has a choice collection of gangrenous corporate members in his office. Oftentimes, however, the gangrene is of the moist, sloughing character, as will be seen in the cases cited. The pain is sometimes very severe and lasts for several days, and the process of healing is very slow. Three or four months may be consumed in restoring the skin, and then crusts of epidermis may continue to form and detach for more than a year.

The following case was seen by me in February last:

Peter L., a lawyer, 32 years of age. Had always considered himself well, except for the trouble in his feet. He came of rugged English stock, and he said that his grandfather fought on the English side at the battle of Bunker Hill. In 1886 he was called up one cold winter night, and was driven several miles in an open sleigh to draw up a man's will. On returning, he found his right foot slightly frost bitten. A vigorous rubbing restored the circulation, however, and he thought no more of it.

A few days after, he noticed a change in color of one of the toes, and then a superficial sore formed. This gradually healed and then a sore came upon another toe; this sort of thing continued for a year, when he noticed similar appearances upon the toes of his left foot. During the three years that had elapsed at the time I saw him, the individual attacks had so overlapped each other that he had never known a time when his toes were entirely free from these sores. Each new attack was ushered in by a severe pain which lasted for a few days. By wearing old shoes with the toes cut away, he was able to attend to his business. The gangrenous ulcers had usually been so superficial that they left no scar on healing, but there was one large, conspicuous cicatrix, upon the under surface of the right big toe, where the recent loss of tissue had been considerable. At the time of my visit the man appeared as follows: He looked very anæmic and feeble. He had been suffering from a severe cold and a slight pleurisy, of which there remained only a few friction rubs. He was sitting in an easy-chair with his feet supported in front of him. There was one toe on each foot with its tip gangrenous. One or two other toes were deeply asphyxiated. The right foot and leg were swollen, and at times turned blue. There was no apparent diminution of sensation anywhere. He could feel the lightest touch on all the toes. The urine contained no sugar, but revealed evidence of Bright's disease, from which trouble the patient died in May.

Some writers have said that Raynaud's disease is not in itself fatal, but the following case by Dr. T. B. Adams shows that it may cause death:

The patient was a poor, feeble-looking child, with sallow complexion. Her breath had a distinctly gangrenous odor on entering the hospital. The feet and lower third of both legs were perfectly black and gangrenous. The toes were shrivelled up and dry. An irregular line of demarcation existed about the junction of the middle and lower third of both legs, and the suppuration was already considerably advanced. The left leg was more extensively affected than the right. For three months previous the child had been subject, in the forenoon of every day, to attacks of arrested circulation, with imminent gangrene, upon the ears and cheeks and on one or both hands. Ears or cheeks were never observed to be affected on the same side as the hands, but alternately. The child entered the hospital March 11, and died from exhaustion April 7.

THEORIES.

As to the nature of the disease, I find that opinions are widely variant and the evidence incomplete. Raynaud believed that all three stages were due to perverted innervation of the arterioles, and he has written a number of articles to defend this theory. Among other facts, he has noticed

that some patients are affected by an obscurity of vision during the local peripheral discoloration, and in such cases he thinks he has detected a contraction of the retinal vessels, which would harmonize with his theory of arterial spasm. Other writers, while they allow that arterial spasm might account for the white fingers, do not believe that such spasm could be sufficient to produce gangrene, and therefore they think that the trouble is a tropho-neurosis or an impairment of the nutritive functions of the cells themselves, irrespective of the arterial supply.

O. Weber advanced the theory that the color changes in local syncope were due to a spasm of the muscular fibres in the skin itself, while Weiss thinks that the local asphyxia is due to a spasm of the veins of the part. These theories, however, have received no credence beyond their own authors.

Pitres and Vaillard report a case in which at the post-mortem they found parenchymatous degeneration in the nerves of the part, *i. e.*, a local neuritis which extended for some distance outside of the dead tissue. They said the changes observed were not such as ordinarily occur in thrombotic gangrene, and which are due to an extension of inflammation from neighboring tissues, and they think that their case was a neuritis. On the other hand, Recklinghausen reports a case, wherein he found an endoarteritis obliterans in the arterioles of the gangrenous member. It is evident, therefore, that similar conditions may be induced by dissimilar processes, and that many cases which are to-day grouped under one heading must be further differentiated before we can reach a satisfactory solution of the essence of Raynaud's disease.

ETIOLOGY.

Numerous accidents and insults have been quoted as productive of symmetrical gangrene. In the case reported by the reader, frost bite seemed to be the provoking cause in the right foot. Syphilis, malaria, abuse of morphine, heredity, have all been advanced as causes of this disease. Hochenegg says that various disturbances of nutrition may provoke symmetrical gangrene, as

- a. Excessive physical exertion.
- b. Chlorosis and chronic anæmia.
- c. Chronic inflammatory and acute infectious diseases.

Symmetrical gangrene is also often observed with Bright's disease and diabetes. Goldschmidt describes a case in which gangrene was associated with scleroderma, and he believes, with a number of others, that Raynaud's disease is only one phase of scleroderma. On the other hand, local syncope not infrequently accompanies attacks of paroxysmal hæmoglobinuria, and Dr. Druitt describes such an association in his own person.

During an attack, he would fall into a condition resembling the algid stage of cholera. Then a patch on his cheek or his nose or his fingers would grow cold and white. He also had such localized syncopal spots with attacks of jaundice, supposed to be due to spasm of the hepatic arteries. He believed in the angio-neurosis theory.

TREATMENT.

The treatment of any stage of Raynaud's disease is extremely unsatisfactory. The *digiti mortui* recur again and again during the cold months, and nothing can prevent it. The most one can do is to keep the parts from actually freezing during their bloodless condition. The local asphyxia is equally obstinate. Some persons never have but one attack, while in others it recurs at irregular intervals. Raynaud and Barlow think that they have mitigated and shortened individual attacks by the use of galvanism, but they both agree that this does not prevent recurrence. At first, Raynaud applied the galvanism along the spine, on the supposition that the seat of the disease was central, but he soon found that peripheral applications worked equally well. Internally, various remedies have been employed with invariably negative results. Nitrite of amyl has no power to abort an attack of local syncope. Iodide of potash and nitro-glycerine are equally impotent.

In closing this paper, it will be of interest to note a peculiar affection described by S. Weir Mitchell, and termed erythromelalgia or red neuralgia. This is a painful affection of the extremities, generally of the feet, and is accompanied by a flushing and mottling of the parts upon slight exertion. It may attack the toes symmetrically and progressively. There is intense pain in the toes and bottoms of the feet, which is relieved by rest and the horizontal position. The trouble occurs oftenest in males, between the ages of 20 and 40 years. It is not amenable to treatment.

ON THE VALUE OF ANTISEPTIC TREATMENT, AND PROTECTION FOR THE MEMBRANA-TYMPANI, IN PERFORATIONS THE RESULT OF OTORRHOEA.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, Newport, R. I., June 25, 1889.

BY LAURENCE TURNBULL, M.D., PH.G.

OF PHILADELPHIA, PA. AURAL SURGEON TO THE JEFFERSON MEDICAL COLLEGE HOSPITAL.

It will not be necessary at this late date, to advocate or dwell at length upon the great value, nay, absolute importance, of antiseptic surgery. Its latest triumphs and most brilliant results, have been shown in brain surgery. It is not only possible to reach and drain abscesses in the temporo-sphenoidal lobe of the cerebrum, but it

is considered possible to save life by opening into the cerebellar fossæ and removing pus from the neighborhood of the lateral sinus. The antiseptic treatment of chronic purulent disease of the middle ear was a natural sequence, and was soon followed by the use of boracic acid in powder and solution, and still later by the superior antiseptic agent, bi-chloride of mercury in solution; then the use of antiseptic wool and gauze, with the protecting agency of oiled silk as "protectors" and artificial membranes which act so as to prevent the entrance of diseased germs from the air. As long as there is a discharge, open Eustachian tube, wash with the solution, then apply the gauze, and when the suppuration has ceased employ the oil silk, or rubber, cut about the size of the membrane applied to the perforation, and when the parts are very dry, use the antiseptic solution or equal parts of ether and glycerine.

Some of the causes preventing the cure of a discharge from the ear, are:

1. The perforation may be so small that injections cannot be made to enter or penetrate the tympanic cavity. These openings must be enlarged.

2. Concealed polypoid growths. These must be snared or touched with chromic acid.

3. A circumscribed area of carious bone involving the ossicles, or attic or mastoid antrum. They are to be removed through the mastoid.

4. A fistulous canal, caused by necrosis of the bone, which forms the upper and posterior wall of the osseous external auditory canal. This is to be kept clean by the mercurial solution; and carious bones or granulations are to be removed by the sharp spoon.

In Non-Closure of Perforations of the Membrana Tympani.—Various attempts have been made to cover perforations of the membrana tympani. Berthold and others attempted to close these perforations by grafts of skin from the arm. These proved too thick and difficult to adapt to the edges of the perforation. He then abandoned this for the lining membrane of the chicken's egg, which is known to be vascular and capable of resisting putrefaction for some time. A fresh egg only must be used, and a suitably sized piece applied to the perforation by means of an especial canula.

Dubousquet substituted for the last-named membrane bits of interdigital skin from the frog's foot. Baratoux has used the *nictitating* membrane of the frog's eye for the same purpose with good results. He also has used it to resolve mucous membrane in certain forms of rhinitis.

Perforations in Young Children are more difficult to treat. Inspection often fails to reveal a perforation, on account of the difficulty of getting a full view of the membrana tympani. This is due to the position of the drum-membrane rela-

tively to the meatus. In the infant, at birth, the membrana tympani lies almost horizontally, and as a consequence, the walls of the meatus lie in contact. At this age the osseous meatus is almost entirely wanting.

In order to gain a view of the membrane in infants, it is necessary, instead of straightening the meatus by drawing the auricle upwards and backwards, as is done in the adult, to draw the auricle downward and outward, and in using the speculum to look upward.

By way of illustration I quote two cases of antiseptic treatment in *otitis media chronica*, with perforation, long continued discharge and noises, entirely relieved by the use of antiseptic covering, as a means of protection from the air.

Nov. 3, 1888. Mrs. A. C., æt. 55, from the interior of Pennsylvania, has been under treatment for perforation in both ears, has a tendency to rheumatic gout, great depression, and heart enlargement from long continued nursing, heavy lifting, etc.

To relieve noises, a 1 per cent. solution of nitro-glycerine was directed, also lithiated potash for rheumatic pain. The ear was cleansed, and then treated with ointment of the yellow oxide of mercury and morphia.

For the slight discharge: Applied antiseptic protectors (gauze sterilized by a solution of mercuric bi-chloride, 1-4000) in both ears. No pain was experienced except in the nape of the neck, for which bromide of sodium 30 grains at bedtime, was prescribed, and over the mastoid painted with tincture of iodine.

It is not necessary to enter into detail, save to say, that one "protector" remained intact for months. No inconvenience resulted, and no noises were heard in left ear, and but slight fullness remained in right. The use of the bromide was continued; so, also, the local application of tincture of iodine.

In the case of Mrs. Robert M. I., æt. 30 years, an otorrhœa (*otitis media chronica*) with three perforations in right ear and two in the left; has had more or less discharge for thirty years, and has been under the best of care in New York and Philadelphia; but only received temporary benefit. By the use of equal parts of glycerine and tinctura ferri seq. chl. to the throat and antiseptic solution to the ear, the perforations in the right ear closed. There still remain two perforations in the left ear, which have become free from discharge; these were covered with antiseptic protectors, and now the patient is much improved in her hearing, no pain and no discharge. I might occupy your time in details of at least fifty similar cases, of all ages, occurring within the last two years, some of them of the most severe and protracted character, which have eventually been either cured, or else so protected that they were no longer distressing to the patient. The great

secret is the use of the antiseptic, and excluding of foul and contaminated air, which is all the while charged with injurious material, which irritates the delicate mucous membrane, by simple contact, or generating bacteria, and micrococci of various forms. This poison causes not only grave disease of the middle ear, but also of the brain, entering the blood, and being carried from thence to the lungs ultimately, developing phthisis and other constitutional diseases, more especially in the young and delicate. To prevent such results, I always resort to constitutional treatment, the syrup of the iodide of iron for children, and for adults, to "Chapoteaut's morrhual," or active principle of cod-liver oil, and the elixir of the valerianate of strychnine.

The "protectors" or artificial membranes have another advantage in that they in the majority of cases, while assisting the healing of the perforation, improve the patient's hearing by support and pressure on the ossicles.

I would recommend thorough and complete antiseptis in all cases of otorrhœa. The cleansing must be done by skilled hands, and just so soon as all products of fermentation or decomposition are removed, then the healing process will commence, and "Dame Nature" will complete the cure.

I use the term "protectors," because, be the substances used to exclude noxious air or vegetable or animal life, what they may, they do not always act as artificial membranes (*membrana tympani*), and if in using such a protector of inert material or of animal tissue, we can secure the double purpose of antiseptic protection and augmentation of hearing power, we have every reason to be satisfied.

In conclusion, I should urge treatment in every case of otorrhœa with the idea of not only preventing all discharge, but of furnishing protection, at all times, to the mucous membrane of the tympanum; which protection, in the form of a mechanical protector, in nine cases out of ten, practically acts as an artificial *membrana tympani*.

1502 Walnut Street.

RELAXATION AND MANAGEMENT OF THE PERINEUM DURING PARTURITION.

Read before the Golden Belt District Medical Society of Kansas, July 4, 1889.

BY WILLIAM B. DEWEES, A.M., M.D.,
OF SALINA, KAN.

(Concluded from page 355.)

This brings us to the second grand division of the subject. Recognizing the natural law, that:

1. Normally, every perineum will properly dis-

tend to allow the exit of the child, leaving all the tissues intact.

2. To obtain a normal dilatation of the perineum, sufficient to allow the exit of the child, preserving the integrity of the tissues, is the highest object attainable.

It becomes the most solemn duty of the obstetrician to conscientiously endeavor, by a studious scientific inquiry, to seek and remove—as far as lies within his knowledge and skill—the *real cause* of the defective distensibility of the soft parts; to which factor, science and experience alike teach us, parturient lacerations of the perineum must be so largely ascribed; if he would do the best thing, in the best way, to prevent rupture when the head is down on the perineum.

Contemplating this subject, I have endeavored to seek in nature the phenomena of the *true doctrine*. Lest I fail to acquit myself of a just consideration, let me assure you of my entertaining no particular attachment, nor prejudice, to any opinion of the authorities respecting it. This circumstance gained me the advantage of an unbiased and impartial examination of facts, from which I drew my conclusions with a deference to reason. Thus, for more than fourteen years, my earnest practical attention has been devoted to this subject, at every opportunity presenting. Being called to a woman in labor, and finding her in the first stage, I invariably endeavor to ascertain, as early as possible, whether there is any disposition in the soft parts to yield, as labor advances, and whether it be complicated with any mechanical obstruction, such as indurations, scirrhus, contractions, adhesions, tumors, malformations, etc. The case proving to be one within the scope of this paper, and bearing in mind the two general causes of laceration, to wit:

First.—The undilatable character of the perineum and adjacent soft parts, chiefly the vulva and anterior perineum; and

Second.—The wrong direction in which the uterine forces operate.

The indications for relaxation and management are very clear, viz.:

First.—To remove all exciting and aggravating causes, and to diminish, by direct or indirect measures, the vascular and nervous excitement, both general and local.

Second.—To guard the perineum, by guiding, controlling or aiding, with artificial means (chiefly the hands and forceps) the uterine forces so as to operate properly.

With my mind thus refreshed, I keep the lying-in chamber quiet, cool and well ventilated; allow the patient none but semi-solid and liquid, easily digestible food; limit the company to the fewest number consistent with the requirements; confine conversation to suitable and agreeable topics; quiet the patient's anxieties with presenting the most favorable prospect in accordance with the

truth and duty; and constantly direct every detail tending to better her physical comfort. Thus removing all exciting and aggravating causes, I proceed to the consideration of the means which proved most efficient, to diminish vascular and nervous excitement, thereby obtaining normal distensibility of the tissues.

Ordinarily my first step is a rectal enema of *hot water*, 120° F., ranging in quantity from 1 to 3 pints, administered during the interval of pains, with the patient lying in the left lateral semi-prone position; the water allowed to be evacuated only when it can no longer be retained. This may be repeated several times, *pro re nata*. The first injection will usually be voided in a few minutes, doing scarce more good than bringing away the accumulated fæces. However, a second one, administered immediately after, will be easily retained from fifteen to thirty minutes and even longer. During the pains *hot water*, from 120° to 130° F. (as hot as the patient can bear comfortably) wrung out in clean cloths, applied to the distended perineum and vulva. Water used *hot* as here indicated, has proven of great value in my hands. In the majority of cases of "vital rigidity" its therapeutic value was chiefly manifested, in order as follows: By giving great comfort to the patient, in producing a general warmth and quietude; by allaying both vascular and nervous excitement; by promoting labor pains; by inducing rapid relaxation of the os uteri, vagina, perineum and vulva; and in many instances lessen suffering and shorten labor very materially. The minority of cases of this class will, however, not yield to this treatment; hence we have to resort to other means following this step, in our endeavor to successfully aid this physiological process to its safe termination.

This brings us now, to carefully notice the two distinct general classes into which these cases are naturally divided, in order that we may the more intelligently comprehend the indications for treatment in each class respectively, lest we should find ourselves guilty of error, with serious consequences to mother or child, or both, as well as to our own reputation. These two general classes are:

First.—Those who are mainly of a "*sanguine temperament*"—plethoric, of firm fibre or possess much muscular power, and who are generally composed but irritable.

Second.—Those who are mainly of a "*lymphatic temperament*"—anæmic, of lax fibre or possess but little muscular power, and who are generally nervous and irritable.

The two remedies paramount are *blood-letting* and *chloroform*. Venesection is the sheet-anchor in the first, while chloroform is equally so in the second, of the two general classes of these cases.

Were these grand distinctions more generally recognized and these rational means properly em-

ployed, we would learn much less frequently of the serious results occurring from rigidity, than the present statistics are forced to show. This is, however, not a new—though it be a much neglected—doctrine, for we learn that as early as 1860 Hodge⁷⁶ wrote: "The testimony of practitioners seems to prove very positively, that all the rigidity which depends on *muscular excitement*, often so great as to cause spasms, will be relieved by anæsthesia; the tension disappears, and the tissues become relaxed; but where the rigidity depends more upon *vascular excitement*, or upon any physical condition of the parts, there is comparatively little or no relaxation."

Experience has taught us, however, that the distinction drawn by Hodge, though proper, is too scarce in detail to serve as a reliable safeguard to all, when occasion demands discrimination at the bedside. Therefore I beg leave to submit the following differentiation as to the employment of these means, as well as the similarity in result obtained:

BLOOD-LETTING.

CHLOROFORM.

1. Blood-letting (venesection) is indicated and should be employed only in the first of the two general classes of these cases.

2. To be effectual must be copious.

We have not observed in any instance, that a less quantity than 20 ozs. has produced any great effect upon the rigid tissues at the pelvic outlet; but in those cases where from 20 to 40 ozs. were taken, it frequently acted like a charm in producing rapid dilatation of the parts. Hence we have often repeated the operation, with the most happy results, when no effect was manifested from the first bleeding. The uterine contractions when weakened from prolonged efforts, in these cases, have invariably been stimulated into healthy activity following this procedure.

1. Chloroform is indicated and should be employed only in cases only in the second class.

2. To be effectual, must be administered moderately and only during the period of uterine contraction; but at no time, to *total* unconsciousness and insensibility.—or to complete anæsthesia.

We have not observed in any instance, that any great effect was produced upon the rigid tissues by this agent, unless continued to produce very effectually in producing dilatation of the parts; as well as stimulate the uterine contractions to healthy activity, when previously weakened by prolonged efforts; but that whenever it was pushed to complete anæsthesia the uterine contractions were arrested. It is preferably administered by placing $\frac{1}{2}$ to 1 teaspoonful of chloroform upon a little absorbent cotton at the bottom of a goblet, and requesting the parturient woman to hold the goblet in her own hand, raising it to her nostrils at the "on-coming of each pain," and to freely inhale therefrom. The moment the much desired stage of semi-anæsthesia is reached, the band with goblet will drop, and thus we have a safety-valve against complete anæsthesia.

3. Thus employed, at the time of parturition, is a safe, easy and effectual means of lessening the suffering; relaxing the rigidity of the perineum and adjacent soft parts; and often shortens labor very materially.

4. It may be objected to this practice, that copious blood-letting would occasion syncope, whereby the uterus might lose its power of contraction and consequently there would be an inability to expel the fetus. Such an accident we believe could not occur unless considerable more blood than necessary was taken, since we have the following two laws, as well established factors in science:

First.—That a large quantity (20 to 40, and even 60 ozs.) of blood,

3. Thus employed, at the time of parturition, is a safe, easy and effectual means of lessening the suffering; relaxing the rigidity of the perineum and adjacent soft parts, and less often shorten labor.

4. It may be objected to this practice, that chloroform anæsthesia would occasion cerebral anæmia, whereby the uterus might lose its power of contraction and consequently there would be an inability to expel the fetus. Such an accident we believe could not occur unless considerably more chloroform than necessary was administered, since we have the following two laws, as well established factors in science:

First.—That chloroform may be administered periodically in

⁷⁶ Hodge's System of Obstetrics, p. 427—remarks on perineum.

may be drawn from the arm of small quantity (from $\frac{1}{2}$ to 1 dr.) to the parturient woman, without injury to the mother or child.

Second.—That it is not necessary to bleed until fainting is induced, in order to effect a relaxation of the parts or to restore the uterus to its normal action.

to the parturient woman, without injury to the mother or child; but administering it continuously or to complete anesthesia, is always fraught with great danger.

Second.—That it is not necessary to administer the anæsthetic continuously nor to complete anesthesia, in order to effect a relaxation of the parts, or to restore the uterus to its normal action.

Speaking of the wrong direction in which the uterine forces operate, as a frequent cause of lacerations, we can do no better than quote Hodge,⁷⁷ who teaches that: "Perforations occur frequently, because the whole uterine forces are directed chiefly upon the posterior perineum, as is observed in occipito-posterior positions of the vertex, in some positions, it is said, of the shoulder presentations, but more especially in cases of deformed pelvis, especially where the sacrum is too straight, or too near the pubis, or where the os coccygis is ankylosed or turned too much inward, and also where the rami of the pubis and ischia approximate too closely, making the arch of the pubis too angular. In all such instances, the proper extension of the head cannot occur, and it is determined inordinately against the floor of the pelvis." Here, we repeat, the indications for management are "to guard the perineum by guiding, controlling or aiding, with artificial means, the uterine forces, so as to operate properly."

This is chiefly to be accomplished by the *hands* and *forceps*. But it must be remembered that no one definite procedure can be given by which all the different conditions occurring from this cause can be equally successfully corrected. Therefore it behooves every conscientious physician who undertakes to direct the parturient process, to carefully, thoughtfully and earnestly study the character, condition and, so to speak, the individuality of each case of labor to which he may be called, if he would intelligently "follow his guide and fear no evil," and obtain all possible success in preserving the integrity of the tissues. Nevertheless, how often do we find physicians who are in the habit of making an examination by the vagina in order to ascertain the progress of labor, without paying any attention to the individual state of either the *physical* or *nervous* condition of the patient, and idly sitting by the continued useless sufferings, awaiting the "labor's own time for termination." I have seen—one of my earliest cases, while faithfully carrying out directions "to wait at my post," a consulting physician draw a dead child through a ruptured perineum—a child lost, and the perineum separated. How much better to have applied the forceps in time to save the child perhaps, and with proper precautions the perineum, sparing the mother all that long agony. Case No. 4 of this paper is likewise in point.

Forceps delivery not being within the province of this paper, I shall confine myself, in my concluding remarks, to the use of the hands. Of the various foregoing methods as advised by the numerous authorities on this subject, I have myself found the greatest benefit from those as practiced by Goodell, Playfair and Reamy.

However, neither of these methods enabled me to secure all that it seemed possible to obtain in this direction, consequently—"Find thou the method, and the means prepare." I have endeavored to find the means by which the greatest possible good could be obtained, and take great pleasure to submit for your consideration and criticism the following management, which proved more beneficial than any other, tried with my hands:

When I find the head fairly engaged in the pelvis, and advancing with each pain, the tissues rigid and unyielding, I take my seat by the patient's bed and, having lubricated my left thumb, or the two first fingers of my right hand, I introduce either into the vagina, by hooking over the fourchette and posterior commissure, and at the outset of a uterine contraction draw back the perineum firmly but gently toward the coccyx, as far as is possible, relaxing the tension gradually as the contraction lessens; repeating the same procedure at each ensuing contraction, till I can draw back the perineum with slight effort. During the interval of contractions, I foment the parts with hot water (120° to 130° F.) wrung out in clean cloths (towel or napkin), and also freely using inunctions of lard. Thus I *tire out* the contractility of the muscular structures, and produce relaxation, as well as a consequent disposition of the tissues to dilate. In most cases so treated the perineum is in the least possible danger; and in this connection, may I be permitted to ask—Does it not seem anomalous, that the perineum should be expected to dilate on such a short notice, namely: the "*process of extension*," while dilatation of the os and cervix occupy such a considerable time, comparatively speaking, even with the additional help of *Nature's hydrostatic dilator*, viz.: the bag of waters?

The drawing back of the perineum produces no additional suffering, as it is done during a uterine contraction. However, when the head begins to bulge the perineum, and its distension is such as to indicate peril to its attenuated structures, I order the patient placed in the left lateral (English) position obliquely across the bed, with the nates brought to its verge, the thighs and legs semiflexed, and the right thigh supported during the period of contractions, by the hand of the nurse, is held in a position raised about 18 inches from its fellow.

Placing my hands, with thumbs parallel, upon the perineum, about 1 inch from its median line on each side, the tips forward and on a level with

⁷⁷ Hodge's System of Obstetrics, p. 422.

the posterior commissure, the fingers grasping the tissues around the nates on each side respectively (See Fig. 1), I am able to give the greatest possi-

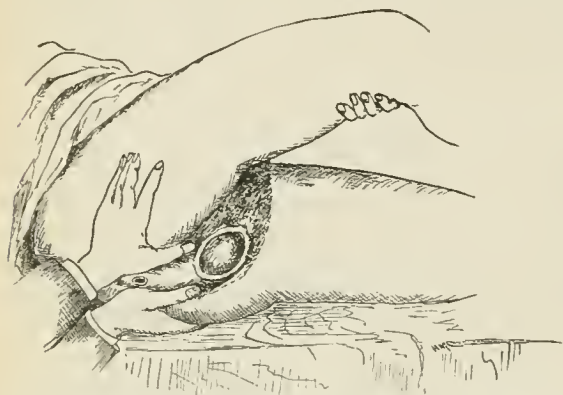


FIGURE 1.—Illustrates the application of the hands, with thumbs parallel upon the perineum, about one inch from its median line on each side, the tips forward and on a level with the posterior commissure, the fingers grasping the tissues around the nates on each side respectively. Thus the greatest possible aid can be given by exerting pressure during the efforts at expulsion by the uterine contractions, in such amount, in such direction, and at such parts of the thumbs and palms, as the necessity of the case may demand.

ble aid, by exerting pressure during the efforts at expulsion by the uterine contractions in such amount, in such direction and at such part of my thumbs and palms as the necessities of the case may demand. (See Fig. 2.) This is a combina-

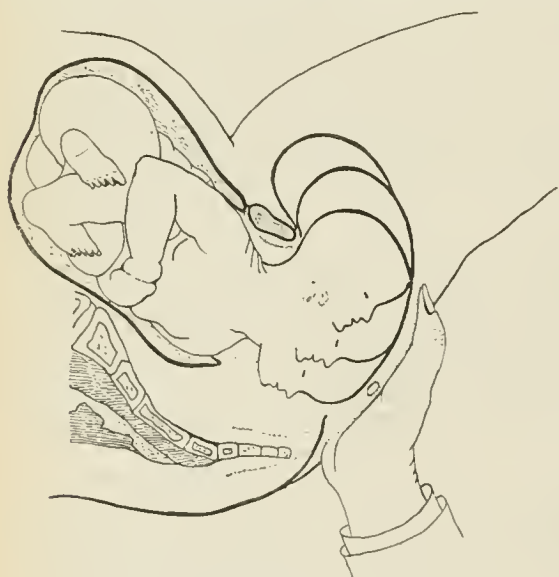


FIGURE 2.—Illustrates the natural bulging of the perineum, by the child's head, in the various stages of extension and flexion, in its advance during exit from the parturient canal. This also shows the convexity of the perineum, and the even application of the hands (compare Fig. 1), whereby the pressure is so evenly distributed as to avoid that perilous excitation of expulsive efforts, through reflex stimulation, that is caused by the localized, partial and unequal pressure (a fact elicited by W. Tyler Smith*), when but one hand or the fingers are employed. Here can also be seen how pressure exerted at different parts of the palm, or thumb, or both combined, in different directions, will aid in sustaining extension or flexion of the head, and in bringing to aid the tissues from the adjacent parts, and by pushing forward and upward, secure the natural advance of the fourchette, as well as the right angle of the plane of the vulvar outlet to the axis of exit of the parturient canal.

tion method—support with a view to relaxation. Pressure can be so exerted at the palms in the direction of the axis of the inferior strait, with a view of extension of the head, and later on in a more forward direction with a view of sustaining flexion of the head; at the tips of the thumbs with a view of retarding the head and preventing its too sudden exit, and also to aid in sustaining flexion of the head during its exit: while pressure at the same time upon the pelvic floor, so exerted as to endeavor to bring the thumbs closer together with a view of pushing the skin from adjacent parts toward the fourchette, thereby securing the greatest possible diameter of the vulvar outlet in that its plane is brought nearest at right angles to the axis of exit of the parturient canal—(as pointed out by Garrigues—See Fig. 3), as well as furnish-

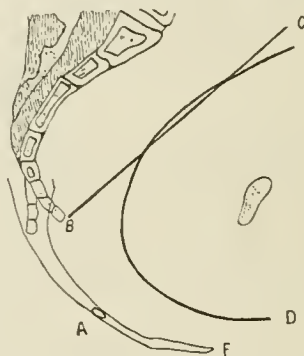


FIGURE 3.—(After Barnes).—This illustrates several facts rarely referred to in text-books.

The distance from A to F—the anus to the fourchette—is greater than the distance from B to A—the coccyx to the anus—while in the non-parturient state the latter is only about one-half that of the former; thus showing the elongation of the perineum during the exit of the child's head. This elongation of the perineum, and the bending backward of the coccyx, contribute to the hemispherical contour of the perineum noticed in parturition. (Compare Figs. 1 and 2.)

Here we have illustrated also the fact as pointed out by Garrigues,† "in order to get the greatest diameter of the vulvar outlet, it should be as nearly as possible at right angles to the axis of exit to the parturient canal." And again, the natural fact of this downward and forward movement of the posterior perineum, as elicited by Goodell,‡ "the fourchette approximating the level of the symphysis," which must be aimed at in endeavoring to render aid successfully.

ing the greatest amount of skin for its dilatation, and preventing rupture. It must be remembered that the perineum admits of a division into two parts, viz.: the *vulvar or external*, and the *vaginal or internal*; the former lies external to the muscles and the latter includes all the rest. Indeed, much has been written lately of the structure of the perineum, and it is interesting and profitable to carefully note the discoveries as made by the recent investigations of Ranny,⁷⁸ D. Berry Hart,⁷⁹ Savage,⁸⁰ Thomas,⁸¹ and Garrigues,⁸² which not only tend to overthrow the prevailing views concerning the muscles and other structures of the

* American Journal of Obstetrics, 1880, p. 241.

† Clinical Lectures at University of Pennsylvania Hospital, Philadelphia, 1877.

‡ N. Y. Med. Journal, 1882.

78 Atlas of Female Pelvic Anatomy, plate xix.

80 Papers on the Female Perineum.

81 Thomas' Diseases of Women, fifth edition, chap. ix.

82 "Obst. Treat. of Perineum," in Am. Journal of Obstetrics.

perineum, but more especially to the latter two are due the facts of pointing out the imperfections of the descriptions of this part of the body in the various works on anatomy. The latter in particular seeks to correct many current false impressions. He says: "The fourchette, so generally torn in first labors, is not a fold of mucous membrane, as usually supposed, but is formed of skin. It is, indeed, nothing else than the posterior junction of the labia majora; just within is the *fossa navicularis*." The elaborate description of the floor of the pelvis is well worthy of study, but is too lengthy to be reproduced in this paper. Emmet⁸³ more aptly than any other, illustrated the muscular lesion in laceration, when he compared it to the drawing aside of curtains, as evidenced by the anatomical relations of the muscles, from the above named investigations. My object in calling the attention of the Association to these facts, is to secure cognizance of all the essentials necessary to obtain the best results.

Finally, my personal experience of no less than from twelve to fourteen years with the "manner of management" proposed and advocated in this paper, warrants me in confidently commending it. But, to succeed with it, requires a most thorough comprehension of the principles upon which it acts, and most faithful painstaking in every detail of its execution.

As the country general practitioner and the eminent city accoucheur likewise, may unexpectedly meet with parturient wounds of the perineum, even when the utmost caution and care have been exercised by following the plans and advice of well known and leading authorities, we deem it not out of place to have a free interchange of experience and opinion respecting the best means to preserve the perineum intact.

I feel warranted in saying, that any physician who does not earnestly labor to acquaint himself with the farthest advancements, and zealously endeavor to observe well established laws which are life-saving and health-giving, in the discharge of the duties of his calling, perpetrates the greatest wrong on his patient. It will not avail to abuse or ridicule the specialist. Those unsealed lips will speak out in future against the man who does not heed the warning. How much better, then, to prove ourselves like the clerk of Oxenford in Chaucer:

"Gladly wolde he lerne, and gladly teche."

REPORT OF CASES.

I beg leave to narrate several cases in practice, demonstrating the principles advocated in this paper. But, let me not neglect the all-important fact, viz.: Should rupture occur, the IMMEDIATE operation for repair must be resorted to. The fallacy and danger of delay in the work of repair cannot be too clearly pointed out, nor too

positively condemned. Of the different steps of the operation I shall not speak, but earnestly advocate that the clear and rational teachings of Emmet, Goodell, and others, be definitely and absolutely observed in detail, and success, in all reasonable measure, must result.

HOT WATER.

Case 1.—At 7 o'clock A.M. on July 28, 1878, I was called in consultation with Dr. Bechtle, to a case of placenta prævia. Hastening to the place, I found the patient had been in labor and flowing all night, and had lost a considerable quantity of blood; the labor pains from the outset were strong and frequent; that she was of lymphatic temperament, anæmic, nervous, and very irritable, of a tuberculous family and 26 years of age, and in labor with her first child. An examination revealed a very rigid state of the perineum and soft parts, the touch of the finger to the vaginal walls producing a spasm of the tissues almost similar to vaginismus, thus it was with difficulty that I inserted my finger sufficiently high up to reach the os uteri, which was dilated to about the size of a silver quarter-dollar, its edges thin, wiry and unyielding, while the diagnosis was confirmed.

Blood-letting being here contraindicated, chloroform inhalations were considered and advised as the best means to overcome the difficulty, but the patient absolutely refusing to take the same, we were thrown upon our resources for something to aid us and relieve, at least in part, the difficulty and suffering. Nauseating doses of emetics were duly considered, but discarded, whereupon I suggested the use of *hot water*, which being consented to, a rectal enema of 1 quart of hot water, of about 120° F., was administered with patient in the left lateral semi-prone position, during the interval of pains, while *hot water* (as hot as the patient could suffer comfortably), wrung out in clean cloths, was applied over the perineum and vulva (after being first well lubricated with warm lard), with my hand underneath, so as to notice with finger in vagina, the effects upon the tissues. The patient soon became more quiet, the parts began to assume a disposition to relax very perceptibly, and in less than five minutes the os uteri was dilated during the first contraction following, so that immediately thereafter I could readily pass my hand into the uterus; version being accomplished and the child delivered through a well relaxed vagina, perineum, etc.

Case 4.—Mrs. M. S., æt. 37, German, well developed, muscular and plethoric, composed but irritable, married one year, was taken in labor with her first child at about 7 o'clock P.M., June 14, 1889; the pains being mild at first, but continued increasing in frequency and severity till 10 o'clock, when they "came on" regularly every three to five minutes. It was probably an hour later before the patient would consent to an ex-

⁸³ Trans. Am. Gyn. Soc., 1883,

amination, which being then made, revealed a *very rigid* perineum and soft parts, the os uteri dilated to about the size of a silver half-dollar, with edges thin, wiry and unyielding, the uterine contractions frequent and very powerful, causing her great suffering, the child presenting vertex anteriorly, right; foetal heart sounds distinct. I immediately concluded the better course, and advised blood-letting as a means of giving speedy relief and an easy delivery. The patient not only seriously objecting to this, but to anything whatever to be done to her person, saying most emphatically: "I want to be left alone entirely," consequently no attempts to give aid were made until about 7 o'clock A.M. June 15, when she began to give evidence of exhaustion from the long continued powerful contractions, which continued with the same regularity and severity all night, but now they began to grow weaker and less frequent, and at her request I made a second examination, which revealed a completely dilated os uteri, the head during the contractions bulging the perineum, which was, however, still rigid and unyielding, the foetal heart sounds were likewise less distinct. Bleeding was again proposed but likewise rejected by her. I then suggested a hot water enema, which was consented to, and at once placed (using over 1 quart of hot water, 120° F.), which she retained without difficulty for about half an hour, the uterine contractions increasing in tone for several contractions, but as soon as the water was voided commenced to weaken down again. I now made an examination for the third time, and found the perineum comparatively soft and disposed to dilate. Hot water, 130° F., was applied (wrung out in clean cloths) to the perineum for about twenty minutes, when I noticed a discharge from the vagina of a dark red and greenish hue. Suspecting the danger to the child, I listened for its heart sounds, and failing to hear them, I kindly informed the patient of the fact, urging the use of the forceps, to which I soon received her consent. It was now about 8:15 o'clock A.M. June 15. I immediately applied the forceps, and in about ten minutes more had delivered the child through a perfectly relaxed perineum. The child, however, was cyanosed, drew several breaths and expired. The placenta was born with the child. Here we have a clear case that, had blood-letting been consented to early, when first proposed, the child would have been saved as well as the perineum. It also proves that hot water alone is sufficient to produce relaxation of the perineum.

The death of the child being evidently due to the abnormal rigid state of the perineum, and the powerful continued uterine contractions causing a too early separation of the placenta from the uterine walls, the uterine contractions becoming too weak from exhaustion to expel the foetus, even though the perineum became relaxed.

BLOOD-LETTING.

Case 2.—In May, 1875; I⁸⁴ was requested by my preceptor to visit a woman who had been in labor nearly two days. On arriving at the patient's house, the midwife in attendance gave me the following account: The woman, she said, was large and fat, in labor with her first child, and 33 years of age; that she had been in labor forty-six hours, at the commencement of which everything appeared to do well; that the labor, though slow, gradually progressed until the head of the child had passed the mouth of the womb, after which, notwithstanding the pains were strong and frequent, no further progress was made. On making an examination, I found the head firmly wedged in the vagina, the external parts very firm and rigid, and it was with difficulty I could introduce two fingers into the os externum.

Here it was evident, that the rigidity of the external parts was the sole cause that retarded the birth of the child. I therefore immediately determined to bleed my patient, in order to effect a relaxation of the parts. My intention was to bleed *ad deliquium animi*; but after drawing off 48 ozs. of blood and finding there was no tendency to syncope, I stopped the bleeding to examine the state of the parts. I now found that they were very much relaxed, and that the head was slowly advancing, yet so perfectly easy was the patient, that it could not be ascertained from external appearances that the uterus was contracting. I then requested the midwife to take the seat, that I might tie up the arm, and before this was effected my patient was delivered of a large, healthy child, and declared that she did not experience the least degree of pain during the expulsion.

Case 5.—Mrs. J. K., æt. 46 years, the wife of a well-to-do Pennsylvania farmer, a large, muscular and well developed woman, sanguine temperament—being very plethoric; the mother of fourteen children, having had a comparatively easy labor with all, her children always being small at birth. Became in labor with her fifteenth child on the morning of the 13th day of March, 1885. During that entire day and night her pains were very frequent and strong, yet had so little effect in dilating the os uteri, that on the morning of the 14th it was only opened sufficiently to ascertain that the vertex presented anteriorly to the right. She continued suffering considerably from the violent contractions of the uterus, till 2 o'clock P.M.; but notwithstanding this strong action, the perineum remained inflexibly hard and tense, though the os uteri was fully dilated at 10 A.M. In the meantime I tried hot water enema, but it was impossible for her to retain it, while the injections of lard and hot water fomentations ex-

⁸⁴ William B. Dewees' Thesis on Means of Lessening the Sufferings of Parturition, for the Degree of M.D., University of Pennsylvania Medical Department, class 1877, p. 19, case vi.

ternally gave good effect upon the vulvar portion of the perineum, yet the muscular or deeper portion remained unyielding.

She being opposed to bleeding, I resorted to chloroform, which was absolutely ineffectual, making no impression or perceivable effect in relaxing the deep perineum unless pushed to a stage of complete anæsthesia, when the uterine contractions were arrested simultaneously with the relaxation of the perineum, and the moment the anæsthetic effects wore off, the uterus regained its vigor and the muscles of the perineum regained their former rigidity. This being repeated several times with similar results, I now obtained consent to bleed, and she lost by venesection 16 ozs. of blood. This, however, produced no effect; the perineum still retained its pristine rigidity at 4 o'clock P.M., when the uterine contractions began growing weaker from exhaustion. At about 4:30 P.M. I drew off from the vein in her arm 20 ozs. more of blood. So immediate was the relaxation of the perineum and the revivifying of the uterine contractions, that in twenty minutes she was safely delivered of a 13-lb. male child.

It may not be out of place to state that this woman's last previous child was born eight years before, that she had grown much more fleshy and fat, having increased in weight, up to the time of becoming pregnant the last time, 65 lbs.

Here we have a most striking case of the good effects of blood-letting in relaxing the perineum.

CHLOROFORM.

Case 3.—Mrs. R. W., ⁸⁵æt. 32 years, being in an advanced stage of tuberculosis—the diathesis being hereditary, father and mother both having died from consumption—and a very nervous and irritable woman, had always suffered very much and long during all of her previous six confinements. This woman was taken in labor with her seventh child on the morning of June 2, 1876, and continued in great misery until the following day, when I was sent for. At 6 o'clock P.M., when I reached the lying-in chamber, I found her suffering excruciatingly, the pains returning every five minutes, and were violent in their nature. Upon making an examination the os uteri was dilated about the size of a gold dollar, the edges very thin and wiry, the perineum very hard, and the rectum filled with scybala. A warm water clyster unloaded the rectum, warm lard was freely applied to the perineum and vulva, and chloroform inhalations followed.

The patient was almost immediately relieved from the extreme suffering, while the uterine contractions seemed to come on more gradually and continue longer, and more powerful. There was none of that excited character in the contractions which distinguished those prior to the inhalations. The patient was not allowed to become insensible

from the chloroform. Immediately after each subsidence of the contractions the chloroform was withdrawn—the interval of repose between the contractions becoming longer and more restful—and immediately upon their return was it again placed to the nostrils as before. This was continued during the entire delivery. After a few contractions had taken place after the chloroform inhalations were begun, I made an examination and, to my surprise, the os uteri was fully dilated, the bag of waters bulging the perineum, and the soft parts were fully disposed to dilate. I now ordered the midwife to place the chloroform, immediately after the return of the next contractions, which I would announce to her. This being done, I carefully watched the effects of the contractions, which were powerful, as they broke the waters and expelled the child, in this one permanent contraction; the patient declaring herself to have experienced almost no pain. The time occupied in the full dilatation of the os uteri, perineum and adjacent soft parts, and the delivery of the child, from the first inhalation of the chloroform, was about forty minutes. There were no evil after effects to either the child or the mother.

Case 6.—Mrs. J. O., æt. 20, American (born in New York); medium height, well developed, of lymphatic temperament, nervous and irritable. Menstruated last the first week in October, 1888, hence by regular calculation would have been due July 8 to 13, 1889. *Primipara.* After suffering from irregular periodic pains for several days and nights, I was called on the morning of June 24, 1889. An examination revealed a normal os uteri, with no disposition to dilate, nor was any decided contraction of the uterus manifested during the period of pains. All considered, I concluded to trust the case to nature for further developments. At 8 o'clock on the same day, evening, I visited my patient again and found her in a similar condition. Satisfied that the suffering was caused by spurious, premature or "false pains," I accordingly administered a $\frac{1}{2}$ gr. dose of morphine, which produced a quietus, and she had a refreshing sleep and good rest all night, as she informed me on my visit the following day. She was free from pain until the evening of the 25th of June, but concluded to pass the night without any attempt to get relief, and thus she continued in more or less suffering from irregular periodic pains until about noon of June 28, when she perceived a decided change in the character of the pain, which now became more regular and cutting. The midwife in attendance, noticing "a show" about 2 o'clock P.M. on the same day, dispatched the husband for me. Upon my arrival I found the patient in labor, contractions regular and forcible, about every five minutes, the os uteri dilated to about the size of a double eagle, and yielding naturally at each contraction. The perineum, however, was very rigid and promised some

⁸⁵ Loc. cit.—Author's Thesis, p. 22, case x.

difficulty ahead. Everything progressed naturally till the os uteri was fully dilated, and the bag of waters bulging the perineum, which proved unyielding; the liquor amnii being discharged naturally at about 4 o'clock, when the head advanced upon the perineum at each contraction, but in vain. I now tried hot water enemata, but she was absolutely unable to retain them. I then applied freely and continuously hot water fomentations and inunctions of lard to the perineum and vulva, and though its effect upon the vulvar portion of the perineum was very perceptible, yet it did not overcome the irritable contractions of the muscular or deeper portion of the perineum. I labored thus with the case patiently and hopefully until 8 P.M., when the uterine contractions began growing decidedly weaker from exhaustion, so much so that the case presented a dangerous outlook. Consequently, after securing the consent of both patient and husband, I dispatched a messenger to Dr. F. B. Browne, who arrived promptly, and administered the chloroform, to a stage of semi-anæsthesia only (the patient declaring afterwards that she was conscious of all that transpired, but that she suffered very little pain), while I applied the forceps and by 9:15 o'clock had delivered a healthy boy of 8 lbs. through a perfectly relaxed perineum, the muscular contractions of the perineum yielding immediately under the chloroform, while the uterine contractions increased, and the head "turned out" with the forceps, leaving the tissues of the perineum all intact.

Here, then, we have a clear demonstration of the effects of chloroform in relaxing the perineum.

THE CLINIC.

REPORT OF CLINICS ON DISEASES OF CHILDREN.

BY WILLIAM B. ATKINSON, A.M., M.D.
OF PHILADELPHIA, PA.

[Reported for THE JOURNAL.]

CHOREA.

Gentlemen: This little patient presents a form of trouble which you are sure to meet with constantly when you engage in general practice. Her age is seven years. You will observe that she has a vague manner of moving her hands—an aimless motion, occasionally a twitching, and which she is wholly unable to control. This is commonly known as St. Vitus' Dance, Chorea Sancti Viti. The case before us is not an aggravated one, and evidently is yielding to the remedies which have been employed. This affection occurs almost entirely during the earlier years of childhood, but may be seen in older children, especially at puberty. While it does occur during

infancy, this is extremely rare, though cases are recorded as young as a few months. Its *causes* are in the majority of instances anæmia, rheumatism, fright, imitation, the presence of intestinal parasites, more rarely of indigestible substances in the alimentary canal, or the excitement incident to uterine awakening, as at the approach of the menstrual discharge.

In my experience, anæmia and rheumatism have been the prodromes of the affection in the large number of cases.

Females are the sufferers in the proportion of two to one male. This may readily be accounted for when we reflect that they are less muscular, more endowed with nerve power. Among girls brought up in the open air, permitted to run and jump, and partake of the exercises which I am glad to say are rapidly becoming fashionable for the girls, here we rarely, I may say never, see this disease. But when a girl is confined for hours to her tasks, in a close poorly ventilated school room, under a harsh teacher, who regards asperity, not gentleness, as the proper method by which to enforce her commands, need we wonder that the child becomes a weak nervous being, or that she soon develops the symptoms of what is known as "nervousness?"

The symptoms are easily understood and the nature of the case recognized. There is an alternate contraction and relaxation of the muscles, generally of the hands, the face, the feet, sometimes of the whole body. The latter form is very rare, and may be taken for a convulsive attack. This is general chorea, and is much more rarely seen than the partial form. In the latter, there may be a constant movement of the hands and feet of one or both sides, or merely the almost ceaseless contraction and relaxation of the facial muscles, particularly of the eyes and mouth. The muscles of the left side are those most likely to be affected, as we see in the case before us. Undoubtedly this is due to the fact that the nerves and muscles of the left side are in the great number of persons less under the power of the will.

Let me in this connection urge you to consider the good results incident to the equal cultivation of the muscles of the left as with the right side. Every child should be encouraged to use its left hand as well as the right. Yet we are such helpless imitators, such creatures of fashion, that when a child in its earlier years attempts to use the left hand we at once resort to all kinds of plans, even cruelty, to break it of the so-called bad habit. Every child should be ambidextrous.

Except in rare instances, as where the cause is fright, the approach of the affection is so gradual that it is not observed, or disregarded as a careless trick of the child. With more or less rapidity the irregular movements become more pronounced; the grotesque actions of the child at-

tract attention, and often it becomes an object of ridicule. This acts to fan the flame, and in its annoyance and efforts to avoid observation, the sufferer is rendered rapidly worse. Except when asleep the affected parts are in constant motion, the actions are awkward, the hands are put forward to take an object and aimlessly withdrawn, the child spills its food on the way to the lips, the talking becomes a task in consequence of stuttering, and in aggravated cases the gait is irregular, although some writers deny that this ever occurs. Occasionally we find this affection associated with incontinence of urine. Upon inquiry this proves true here. This complication is of such importance and of so frequent occurrence that I shall have abundant opportunity to discuss it at these clinics. Again, in many cases we find it associated with "night terrors." Of this also we shall make a separate lecture.

The diagnosis rarely becomes difficult. Unfortunately, it too often is not recognized sufficiently early, and is regarded as the result of a bad habit or thoughtlessness, and treated accordingly by harshness or punishment, which adds to the original trouble. A child that is at all nervous is constantly in dread lest it may do something to incur additional fault-finding.

What prognosis can we give in such cases? From my own experience—which has been quite a large one—I may assure you that sooner or later these cases are sure to recover. Although I have encountered a number of very grave cases, yet I never knew one to end fatally, or to terminate other than in complete recovery. In one case which followed a very severe attack of rheumatism in a weak miserable little boy, the attack assumed for a short time the appearance of eclampsia, and the clergyman was summoned to prepare him for death. However, after a tedious attendance he entirely recovered. While as a general rule these cases rapidly recover, yet occasionally relapses occur and the patient appears as though making no progress. In the majority of cases upon investigation I have been able to prove these aggravations to have been due to natural causes, and might have been prevented.

You are no doubt anxious to learn what treatment promises the best results in such an affection. In this instance the child has been using the solution of the arsenite of potassa, in three drop doses three times a day, and is rapidly improving. In the employment of any of these toxicant remedies, I believe that the secret is to continue and push the remedy until its effect is shown by its special toxicant effects.

I would not have you regard any one form of medicament as the treatment for chorea. In all diseases of children my rule is to act according to indications. Never treat a disease by name. This is the most arrant empiricism. Always treat indications. Learn if possible what is the

cause of the attack, and remove or obviate it if you can.

When anæmia is present give some form of iron and combine it with bark. The ferrated elixir of cinchona is a remedy which children can easily take, and rarely fails of being beneficial. The compound syrup of the hypophosphites also acts well. Build up the system with tonics, proper diet, air and sunshine. In mild cases we need nothing more. Of course, take the child from its studies, and if exposed to influences likely to act badly, remove it to a more congenial situation.

In very many cases we must administer arsenic in some form. The usual preparation employed is what is known as Fowler's solution. Let the dose be small at first, repeated every three or four hours, and continued until its effect is shown by improvement, or by a puffiness beneath the eyes, slight nausea, etc. Then keep up the effect, either until the symptoms of the affection are entirely gone, or if these do not yield, or the toxic effects become too pronounced, it is time to resort to some other form of therapeutic. In the same way strychnia is employed, and several authorities prefer it to the arsenic. All agree that it should be exhibited in extremely small doses at the outset, and gradually increased till the peculiar effects of the drug are shown. These are slight cramps of the muscles, particularly of the calf of the leg. Both with this and the previous remedy I caution you to watch carefully the results, as in both I have occasionally seen the toxic effect suddenly produced. While I feel confident that you will generally cure your patients by the treatment indicated, yet it is necessary to say that now and then you will encounter a case which seems to defy your efforts. Here you may resort to the oxide, sulphate, or preferably the valerianate of zinc. The latter, combined with the valerianates of iron and quinine, will often give speedily the best results. The objection to this is the pill form in which it must be administered in many cases.

Should the movements become excessive so as to tire the child or threaten convulsions, the best thing is the use of the bromide of sodium, which may advantageously be combined with chloral. Do not forget why I prefer the sodium to the potassium salt. The former acts as readily, and without interfering with the digestion or the kidneys.

A variety of other methods of treatment have been proposed and employed, as electricity, serpentaria, etc., but they do not offer any better results. In the very large number of these cases seen here in the past, and which you will see constantly at my clinics, it is extremely improbable if one has occurred or will occur that will not readily succumb to the good effects of tonics, arsenic, strychnia, good diet and sunshine.

MEDICAL PROGRESS.

THE REPAIR OF OSSEOUS DEFECTS AFTER TREPHINING.—DR. R. JAKSCH (*Wiener Med. Woch.*, No. 38) reports a case in which he repaired a loss of substance in the skull after the removal of a depressed piece of bone $3\frac{1}{2}$ cm. in diameter. The operation consisted in the transplantation of bone taken from the head of a gosling a few days old, and was performed ten days after the operation of trephining. At this time the wound was granulating nicely. The down was removed from the head of the gosling, the head itself was then cut off and received in a vessel containing a 2 per cent. solution of carbolic acid warmed to the temperature of 38° – 40° . The top of the skull was then removed under water by means of a forceps and scissors. It was then divided into eight small plates, which were laid in proper order directly upon the granulating dura mater of the patient. An antiseptic bandage was next applied. This was allowed to remain for ten days, and upon its removal all the little bone plates were observed to have a rosy color and to adhere fast to the underlying tissues, while their points of separation were indicated merely by fine lines. Eight days later little knobs of granulation were seen upon the bone plates, while the former lines of separation had disappeared. Upon gentle pressure a parchment crackling was elicited. One week later the whole surface was granulating and no parchment crackling could be obtained by pressure. From this time on granulation advanced rapidly, and fifty-five days after the operation bony union was complete. At the point of injury there was nothing to be seen but a scar and a slight depression. The operator purposely left the wound open, in order that he might observe the progress of repair, and is convinced that vitality was preserved in the bone plates, and that the ossification of the opening in the skull proceeded from them. The transplanted bone plates effected an organic connection with the surrounding parts.

The writer gives the following brief summary of bone transplantations in such cases:

1. Reimplantation of the pieces of bone removed by trephining (MacEwen, Adam Kiewicz, Guérin).
2. Transplantation of pieces of bone taken from another bone of the same individual (Leydel).
3. Transplantation from one animal to another of its kind (Adam Kiewicz, Guérin).
4. Transplantation from one animal to another of a different genus (Guérin).
5. Transplantation from an animal of different order (author's case).

A NEW METHOD OF DELIVERY IN BREECH PRESENTATION.—DR. MARS (*Med. Übersicht*) de-

scribes a method of extraction in breech presentation which he has successfully employed three times during the last twelve years. In the first position of the breech he introduces the right hand between the back of the child and the walls of the uterus, while the left hand is employed to control the uterus. The second, third and fourth fingers of the right hand rest upon the child's back, while the thumb and little finger seize the body by the crests of the ilium. During labor pains the accoucheur draws down until the present part appears at the pelvic outlet, when extraction is completed in the usual manner.

TREATMENT OF PYOSALPINX.—GOTTSCHALK reports (*Centbl. für Gyn.*) his experience with Walton's method of treating pyosalpinx by uterine drainage, preceded by dilatation. He regards the cases of simple collections of pus enclosed by thick walls in normally developed tubes as the only ones suited to such treatment, while the long sausage-shaped tumors with thin walls, separated from each other by indentations such as form in infantile tubes, should only be dealt with by extirpation.

A complete dilatation of the uterine canal prevents retraction of the walls, and in this way a *vis a tergo* is established, permitting the escape of the purulent contents of the tumor. Walton claimed to remove the obstacles to the escape of pus by means of the curette, but the reporter believes it quite improbable that one can directly dilate the tubal orifices by the sound or curette. Gottschalk's plan is as follows: Strips of iodoform gauze are carefully introduced into the uterus and removed the next day, when the uterus is washed out. Gauze is then again introduced in such a manner as to fill up the cornua as much as possible. This is repeated daily several times, and finally the tampon is allowed to remain for three days, until the uterine cavity becomes so much distended that all parts of it can be explored by the finger. Pains like those of labor are excited in this manner. In his two cases so treated the pus cavities were emptied and the patients recovered. When the pus begins to flow the uterine cavity is kept loosely packed with gauze, into which the pus escapes, and the irrigations are continued. If such a plan as has been described is not successful, the curette may be used, although the reporter avoids its use, as it may cause the pus sac to burst.

CODEINE IN DIABETES.—B. NOVARO (*Gaz. Med. di Torino*), has employed codeine successfully in cases of diabetes which have resisted other treatment. He prescribes 1 grain of codeine divided into 20 pills. Three pills are given the first day, and if well borne the dose is increased by 1 pill each day.

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SATURDAY, DECEMBER 14, 1889.

THE CONTAGIOUSNESS OF TUBERCULOSIS.

Not least among the advances of the century is the establishment of the fact that phthisis may be transmitted. The labors of LISTER taught the value of cleanliness even to those surgeons who do not accept all of his conclusions, and the investigations of KOCH have done a like service to the general practitioner. There are many who are yet unable to decide whether the bacillus tuberculosis is the cause or the result of phthisis; indeed, the feeble response that is made to the most approved methods of administration of the most available germicides, suggests very forcibly the thought that other factors may be equally necessary to the causation of consumption, and that the bacillus is not alone all powerful for evil.

However this may be, one thing seems to have been clearly demonstrated regarding the etiology of phthisis, and that is, that the disease is transmissible; that it can be carried from one who is the victim of tuberculosis to another who is free from it. If the bacillus is not the main cause of phthisis, the conditions which favor the growth and multiplication of the parasite are those which favor the development and progress of tuberculosis.

The testimony of experimenters and clinical observers is now almost conclusive as to the possibility of the transmission of tuberculosis, although there is yet and probably always will be, a difference of opinion held as to the manner of dissemination and the way of entrance. M.

VILLEMIN, on behalf of a permanent committee appointed by the last Congress for the study of tuberculosis, to present practical conclusions concerning the prophylaxis of tuberculosis, has affirmed that tuberculosis is a virulent, contagious disease produced by a microbe (Koch's bacillus), which apart from hereditary transmission, finds its way into the organism through the respiratory and digestive tracts, and through wounds of the skin and mucous membrane.

There is probably not much importance to be attached to the idea of the hereditary transmission of the bacillus; in fact, is not the value of heredity as a cause of phthisis rapidly diminishing as the doctrine of contagion is made more lucid? A few years ago the victim of tuberculosis from a family in which there had been other cases, was generally thought to have in some way inherited the disease; to-day we ask if it is not probable that in consequence of close association with one or more of these cases, he acquired the disease by direct transmission of the cause.

It is well not to entirely dismiss the subject of heredity as having no part in the causation of phthisis. While direct inheritance of the disease is not probable, yet certain conditions of physique and temperament may be inherited, that favor the rapid development of the determining agent whenever it is implanted. Though it is possible that tuberculosis may be developed in a person previously in good health, yet we must conceive that it is more easily transmitted to one who through inherited or acquired systemic fault, has diminished power of resistance to disease.

Believing then that tubercular products may be carried to and planted in tissues that are ready to receive and nourish them, the study of prevention is at once suggested. So far, only partial success has crowned the efforts to eliminate the disease after it has once become established. Hence, the most important question of to-day is, can phthisis be prevented? Can the germs of tuberculosis be so thoroughly destroyed that the unaffected shall not be in continued danger from the disease?

In nearly all cases it is thought that transmission occurs in one of two ways: by the inhalation of tuberculous germs, or by their entrance into the alimentary tract with food. The two main sources are, the expectorated material from tuberculous subjects, and meat and

milk from tuberculous animals. It is distinctly asserted by careful investigators that the tubercle bacillus can live in the dried muco-pus, which in the form of finely reduced dust, can enter either the respiratory or alimentary tract. Here the physicians duty is plain.

The sputa of a tuberculous patient can easily be prevented from becoming dry and disseminated through the air, especially if the patient be unable to leave his room or house. Cuspidores should contain a solution of bichloride of mercury not weaker than 1-1,000, or what is probably quite as efficient, a strong solution of concentrated lye of the groceries. The cuspidores should have straight sides so that the sputa may not dry on its surfaces, and all clothes used for receiving expectoration should be kept moist and finally burned. If even this much were insisted upon both in the sick room and about hotels and health resorts, it would surely limit one great source of transmission.

The physician should go farther than this, and insist that no one be permitted to share the bed of a consumptive, nor to sleep in a bed or occupy a room that has been used by a victim of advanced phthisis until the best known methods of disinfection have been thoroughly carried out.

Prevention of transmission of tuberculosis by diseased food is a more difficult matter, yet much may be done by a careful medical attendant to lessen the danger. A consumptive mother should not nurse her child to the possible injury of both. If cow's milk be substituted, care should be taken that the source of the supply be healthy. We may not be able to estimate, but we can often prevent the danger that threatens children, especially in the city, who are daily absorbing milk from swill-fed and often diseased cows. It is no wonder that intestinal diseases closely allied to tuberculosis are constantly found in little children when the substitute for the mother so far as food is concerned, is a feverish cow, closely confined in a dirty shed and fed upon fermenting kitchen refuse and impure water.

Sometime we may have authorized a system of careful inspection of meat, but until then, this duty also must be performed by the physician so far as is possible. It is probable that diseased meat is a much less potent agent in the dissemination of tuberculosis, than either milk from infected sources or the exhalations and secretions

from phthical patients, yet whatever danger there may be from this cause should be averted.

If the march of so universal and destructive a foe to life can be thus easily limited, no intelligent physician can afford to fail to use his best efforts to accomplish so desirable an end. It is true that there is much more to be done, but this at least is practical, inexpensive and in the right direction.

DISINFECTION.

The time perhaps is not far distant when a physician's success will depend largely upon his ability to avoid or avert disease, and not to cure it. Our aim at present, in this direction, is mainly in the way of rendering the excreta of the patient, both solid and aerial, innocuous. Theoretically this can be accomplished in one of several ways; practically none of these ways are perfectly satisfactory. In very many cases—in fact in the bulk of cases—it is impossible to absolutely isolate the patient, and more especially the nurse and attendants. Of what avail is it to fumigate patient and room never so carefully, when all through the course of the disease the nurse has carried about and disseminated through the household the contagium of the disease? Again, is it probable that even hours of fumigating an apartment can destroy the germs carried into its crevices?

In considering the agents to be used for disinfecting, not only must we have in mind their efficiency, cheapness and convenience of use, but also their destructiveness. Sulphur burned in an apartment will destroy the coloring to a large extent, and, to be efficient, must be strong enough to do so. Carbolic acid, the chlorine compounds, corrosive sublimate and permanganates act, in the main, locally by destroying the virus held in dejecta and vestimenta, and vary in their destructiveness.

It is becoming a well recognized fact that surgical operations can be performed and healing go on free from sepsis by rendering the operation and subsequent treatment aseptic, and that anti-sepsis is not needed when the wound is aseptic. A somewhat similar state of affairs is probably true in the management of contagious diseases. While attention should be given to the final disinfection of the apartment, much more attention

should be given to the disinfecting of the patient, his surroundings and attendants during the course of the disease than is usually thought necessary, and it is reasonable to suppose that, other things being equal, recovering will take place the better, the more thoroughly this is carried out. With this end in view it should be the daily duty of the nurse to wipe up with a disinfecting solution the dust which accumulates in the apartment. As soon as the contagiousness of the malady is recognized the patient should be isolated and all unnecessary furniture removed from his quarters. Rigid oversight should be exercised with everything used. The matter may be summed up in a few words; Let everything the patient uses be set aside as his only; disinfect after each use of vessels or appliances; use as little furniture and as few utensils as is consistent with comfort.

It is the experience of our German confrères that typhoid fever and pneumonia do well, do best even, in a very low temperature. While some of the good result obtained by them is, undoubtedly, due to the constant change of air, a part is also due to the lowered vitality of the virus from the cold. It may be of service, then, to add to our other disinfecting agents not alone pure air, but cold pure air, and that, too, during the course of the disease.

EDITORIAL NOTES.

HOME.

THE THERAPEUTIC ANALYST will be enlarged and improved commencing with the January issue.

THE DENTAL COSMOS will commence the 90's by donning a new dress.

THE KALAMAZOO ACADEMY OF MEDICINE will hold their annual meeting during the Christmas holiday week. A committee consisting of Drs. McNair, Van Zwaluwenburg and Hochstein has been appointed to make the necessary arrangements, and some medical gentlemen of National reputation are expected to participate in the exercises. A banquet will be one of the attractions and the election of officers will take place on this occasion. So says the *Physician and Surgeon*.

DR. GEORGE M. STERNBERG, U. S. A., will deliver a lecture before the Brooklyn Institute on the 26th inst. His subject will be "The Methods of Research in Bacteriology," to be illustrated

by living forms of bacterial life thrown upon the screen.

THE JEFFERSON MEDICAL COLLEGE has made a purchase of four pieces of property on Walnut street, in order to make additions to the College and Hospital.

CHRIST'S HOSPITAL AT CINCINNATI.—Additional hospital accommodations are about to be provided under the name of Christ's Hospital. Dr. C. G. Comegys is to be the chief medical adviser and organizer.

POST-GRADUATE CLINICAL COURSES will be shortly commenced at the Johns Hopkins Hospital, Baltimore.

THE ANNUAL REPORT OF THE SURGEON-GENERAL OF THE NAVY.—The annual report of Surgeon-General Browne to the Secretary of the Navy shows that, in addition to the eleven vacancies existing in the Medical Corps in October, 1888, six more occurred during the year—four by death and two by retirement. The transferring of the Medical Examining Board from Philadelphia to New York and the establishment of another Board at Mare Island has been attended with gratifying results, without lowering the standard of proficiency in the examination. A greater number of candidates have presented themselves, and twelve have passed the examination. At present there are eight vacancies in the corps, and there is reason to believe that they will soon be filled.

THE UNIVERSITY PRESS.—The *Philadelphia Inquirer* says that an enterprise in which officers and friends of the University of Pennsylvania have been engaged for some months has just been completed by the establishment of a publishing company under the name of the University Press. A charter has now been drafted and will be applied for. The officers are: Stuart Wood, of R. D. Wood & Co., President; H. La Barre Jayne, Treasurer and Solicitor; A. L. Hummel, M.D., General Manager; and the following Board of Directors: Provost Pepper, Joseph H. Cofrode, J. William White, M.D., Charles C. Harrison, Stuart Wood, H. La Barre Jayne, A. L. Hummel, M.D. (*ex officio*), and G. E. de Schweinitz, Secretary.

The capital stock is \$100,000. Arrangements, however, are being made for doubling this amount,

and it is expected that in the near future the stock will reach \$1,000,000. Among the stockholders, in addition to the officers, are Joseph D. Potts, Thomas Dolan, D. Hayes Agnew, M.D., Samuel Dickson, H. C. Wood, M.D., Edward Martin, M.D., John Marshall, M.D., Dean of the Veterinary Department of the University; James Tyson, M.D., Dean of the Medical Department; John H. Musser, M.D., George I. McKelway, M.D., and Samuel D. Risley, M.D.

The company has been started for the purpose of controlling under one efficient direction the present periodical publications of the University, and of establishing such new magazines as the needs of the institution may suggest.

The addition of six publications to the two now issued under the auspices of departments, the *University Medical Magazine* and the *Political Law Series*, is already assured. The new journals will be the *University Magazine* (literary), the *University Legal Magazine*, the *University Veterinary Magazine*, the *University Biological Magazine*, the *University Psychological Magazine* and the *University Hygienic Magazine*. At least four of these new publications will appear by January 1, when the new organization will begin operations.

DIPHTHERIA seems to be more or less epidemic in all parts of the country.

DR. CHARLES WOLTERS has been elected resident physician to the Philadelphia Hospital, Department for the Insane.

THE NEW YORK BOARD OF HEALTH will take immediate steps to rid the city of the noxious odors arising from the manufacture of gas.

THE MIDDLETON GOLDSMITH LECTURE.—*The Times and Register* says that Prof. Willam Pepper, Provost of the University of Pennsylvania, will deliver the Middleton Goldsmith Lecture before the New York Pathological Society, in the hall of the New York Academy of Medicine, on Wednesday evening, January 15, 1890. The subject of the lecture will be "Hepatic Fever."

THE NEW YORK BABIES' HOSPITAL.—New York claims the honor of having the only Babies' Hospital in the United States. A school for the thorough instruction of nurses in the care of babies will soon be established in connection with the hospital.

FOREIGN.

PROF. NEUMANN received, it is said, \$20,000 for his professional visit to the late King of Portugal.

PROF. VON KRAFFT-EBING has been appointed successor to the late Prof. Leidesdorf in the Clinic for Mental Diseases in the Vienna Landes-Irrenanstadt.

RICORD is said to have left memoirs of his life and professional career under the suggestive title of *The Nineteenth Century Seen with the Speculum*.

RENAL SURGERY.—Mr. Bennett May writes to the *British Medical Journal*: My attention having been directed to Mr. Lawson Tait's table of operations in the *Journal* of November 16, in which he credits me with being the medical attendant of one of his cases, I write to say that I have no knowledge of the circumstance.

DR. GEORGE N. STEWART, who for more than two years has been senior demonstrator of physiology under Professor Stirling in Owens College, Manchester, has been appointed to a George Henry Lewes studentship. Dr. Stewart's researches, especially on the polarization phenomena in nerves, are well known to physiologists.

DEATH OF A MEDICAL MAN FROM GLANDERS.—The Vienna Correspondent of the *British Medical Journal* writes: A painful sensation has been caused here by the death of Dr. Hofmann von Wellenhof, assistant to Professor Grüber in the Institute of Hygiene. Dr. Hofmann, who was only 26 years of age, had under his care a coachman who had contracted glanders from one of his horses. In preparing microscopic specimens of the bacilli of glanders Dr. Hofmann himself fell a victim to the disease, the infection, as was proved by post-mortem examination, having taken place through the mucous membrane of the respiratory passages. Death ensued very rapidly. It is said that another case of glanders has since come under observation in Professor von Schrötter's clinic.

WHOLESOME FOOD FOR RUSSIAN SOLDIERS.—The medical department of the Russian Ministry of War has decided to establish movable laboratories of toxicological chemistry and bacteriology attached to each army corps. In these laboratories all food supplied to the troops will be analyzed.

TOPICS OF THE WEEK.

THE EDUCATION, TRAINING AND QUALIFICATIONS OF THE MEDICAL OFFICERS OF HEALTH.

In the report of a recent meeting in England of the Society of Medical Officers of Health, published in the *British Medical Journal* of November 23d, the President, Henry E. Armstrong, M.R.C.S., commenced his address by observing that the question he had taken for its subject matter had of late attracted much attention, both in and out of the profession. There was a growing feeling "that the medical officer of health should no longer be allowed to learn his profession after his appointment to office, and gain his sanitary knowledge, perhaps after a series of ghastly failures, at the expense of the community by whom he was engaged." Time was when only the ordinary qualifications for medical practice could be required; when in the early dawn of the science of public health "its votaries had to grope their obscure way with feeble and uncertain step;" but those days were now long past. The necessity for an acquaintance with at least the elements of sanitary science by all medical men was already recognized; but how much more was a thorough knowledge of preventive medicine incumbent on those who chose it as their profession? This was now becoming felt even by the public. The idea that "prevention could not be divorced from cure was fast being replaced by the conviction that their union was objectionable on the ground of incompatibility of interests," and he hoped that the appointment to small districts of men engaged in general practice would, before long, be discontinued. The need for special qualifications was beginning to be understood by some sanitary authorities, though it had not been recognized by the Legislature until last year. The first step in this direction was taken in the 18th Section of the Local Government Act of 1888, which enacted that after the year 1891 no person should be appointed medical officer of health to a district or combination of districts having a population of 50,000 unless he possessed a diploma in public health, etc., or had served in that capacity for the three years immediately preceding to one of 20,000 inhabitants, or been for the same time an inspector under the Local Government Board. The Burgh Police and Health (Scotland) Bill went further, demanding the possession of a diploma by all medical officers of health, without exception, and discouraged private practice. Considering the wide range of subjects with which the medical officer must be conversant—legal, statistical and administrative, engineering, chemical, biological, etc.—and the mental training required for the investigation of the problems with which he had to deal, which could not be acquired without prolonged study, Mr. Armstrong was of opinion that not only should higher degrees in public health be instituted, but that aspirants to such degrees, which should rank with the Doctorate in Medicine, might well be exempted from some subjects, as surgery, midwifery, with which they had no concern, and be allowed to offer practical training in sanitary work in lieu of a portion of the clinical practice required of candidates for medical diplomas.

If the departments of curative and preventive medicine should be thus divided, the instruction in the latter given at the medical schools must undergo a great development, and it must be raised into a faculty, instead of being, as at present, looked on as one of the minor subjects. But a grave want in our medical education, from which all students alike suffered, was the absence of all opportunities for the clinical observation of infectious diseases. Many practitioners had never seen a case of typhus, and made their first acquaintance with small-pox and scarlatina after they had entered on private practice, to the injury of their patients and of their own reputation. The records of admission to fever and small-pox hospitals bore witness to the frequent occurrence of errors of diagnosis of the gravest and most dangerous character on the part of private and parochial practitioners. Reviewing the conditions on which the existing diplomas in public health were granted, Mr. Armstrong insisted on the necessity not only for practical instruction in the laboratory, but of a period of service with the medical officer of health to a large town or district. These had, indeed, been recommended by the Medical Council, but had not been as yet introduced into the regulations. This want of administrative experience was painfully felt by medical officers when first called on to report and advise on insanitary dwellings, engineers' plans, or the construction and management of infectious hospitals, and when giving evidence in courts of law. This last requirement might, however, be dispensed with for some time to come in the case of men who had been actually in office for several years. But the medical officer of health, however well prepared to enter on his duties, must keep himself abreast of the progress of his science, and they had a right to claim that those, at least, who were in charge of large or populous districts should be regularly supplied with the reports of the Local Government Board and all like official publications, if only in the interest of the populations for whose well-being they were responsible.

SUMMER CAMPS FOR FEEBLE POOR CHILDREN.

The following extract is from a paper read at the annual meeting of The American Public Health Association, by DR. JEROME WALKER:

In 1874, Drs. Henry Hartshorne and J. M. Toner proposed summer camps, especially for feeble poor children, as an aid in decreasing the high mortality among young children. It was a question when the proposition was made whether mothers would be willing to leave their husbands and homes, even in the hope of improving the health of their sick or feeble children. In 1875, acting upon the experience of charitable people in Copenhagen, some good people of Boston, started what was known as the "country week," the sending of poor children for a week's outing to farm houses in Massachusetts. Since 1874, cities, societies, churches, newspapers and individuals have instituted "fresh air funds," summer resorts and seaside homes for poor mothers and their feeble children. Very little trouble has been experienced in inducing mothers to go for a week or two with their

children, or to allow children to go by themselves, to the seaside, the country or mountains. The husbands, for the most part, have come to see how much is saved in various ways by these trips, and so great is the rush by applicants that the question now is, how can we reach those who need the change most and how exclude the others? A real danger faces all these efforts to help the masses—the danger of overdoing. The charitably disposed, the philanthropic, the lovers of children, the emotional, people of wealth and leisure struggle to have a large sanitarium, the largest, if possible, and many donors, or trustees or helpers have one or more families in whom they are especially interested, and for whom they are positive the charity was established. Doctors are employed at a small pittance, or are allowed to give their services to show that medical attendance is furnished when necessary, but “change of air” is popularly believed to be all that is needed. The physician is not looked upon as a sanitarian, his highest function, and sanitary matters are relegated to irresponsible people. Large sanatoria become unwieldy and are machines, unable to give the true mother-like care which babies need. Better would it be for the babies if there were more sanatoria and smaller. Properly conducted summer health resorts must help to lessen infant mortality, though it would be hard to prove this statement by figures. A week's freedom from home cares and work, with pure air, an abundance of food, good sea bathing, opportunities to ride, etc., frequently brings the milk into the breasts of women who at their homes had insufficient nourishment and could not nurse their children. Mothers are taught the value of digestible, plain, wholesome foods, of regular times for eating, of cleanliness, to discard feeding bottles with long rubber tubes—“snake” tubes as some one has appropriately called them—to appreciate proper airing of rooms, that bathing not only makes a baby sweeter, but healthier. As I look back over my ten years' experience in connection with a seaside home for children, I can recall to mind woman after woman who has learned to be neat, clean, orderly, sensible, not all in one season, but after several visits to the seaside home. Every woman so trained, must, by the influence of her example, lessen, to a certain extent, infant mortality in the circle of her acquaintances.

Any one who has lived in winter in a light, well-ventilated, but well-warmed tent of generous size, or who has camped out in summer in a well-arranged, comfortable, airy tent, must feel that tent life could be readily and advantageously used for feeble and puny children of our cities. And this tenting need not be at a considerable distance from a city, but upon suitable lots or lands which are to be found within or near to the city limits. It behooves those acquainted with living in properly arranged tents to advocate camp life, and to overcome popular prejudices as to tents, founded sometimes on unpleasant experiences in dilapidated and badly arranged tents at camp meetings and other resorts. Large piers, which project into our rivers and bays, portions of our public parks and anchored vessels in midstream might well be utilized as sleeping places on hot summer nights,

when sleep is the principal factor in the recovery of babies that are ill. How much more good could be accomplished by St. John's Guild if its barge had its inmates on the water for several days instead of for one day! What sanatoria the large iron ocean piers would make! To my mind one of the most important steps toward lessening infant mortality has been made by Dr. Sarah J. McNutt. In the summer of 1888 she fitted up a house in a crowded portion of New York city as a city summer sanitarium. Of the 108 babies received, all sick, 79 were under 1 year of age. Of these 79, 32 died, 22 of the deaths being in July, August and September. Dr. McNutt says: “Although that experience covers as yet only one summer, it seems to us to demonstrate that bottle feeding is not necessarily fatal, even in a hospital, and that a hospital for sick babies need not be a place for the production of autopsies alone.” She shows that the quality of bottle feeding has much to do with infant mortality, and that to obtain the results she did hygienic measures were of paramount importance. The cost of maintenance of each patient in the babies' hospital per week was \$4, a larger amount than most institutions care to acknowledge to the public.

“Line upon line, precept upon precept,” an unflagging and judicious sanitary supervision of our children from their birth until we or they are called hence, will, above all things else, decrease infant mortality to the minimum. On the other hand, injudicious sanitary supervision, the watching of almost every mouthful of food a baby takes, constant anxiety lest the child is going to catch cold, the dread that the blood will be overheated by much exercise, etc., will be likely to worry both parent and child into an untimely grave.

MANAGEMENT OF INEBRIATE ASYLUMS.

DR. CROTHERS, of Hartford, Conn., writes as follows:

The first inebriate asylum, at Binghamton, N. Y., was projected in 1844, but was not opened for patients until 1864, twenty years later. This was owing to the intense and bitter opposition to the theory of disease and curability in special asylums.

A good illustration of the historical fact, that every new truth in the progress of the world is greeted with storms of denial and fierce contradiction. This first inebriate asylum was the centre of the most crushing unjust criticism by the press, the clergy and others. Its managers and their theories and methods of treatment were always the subject of condemnation and persecution. The disease of inebriety and its curability in asylums was a great event that could not be suppressed by the change of Binghamton to an insane asylum, and to-day there are over a hundred asylums for inebriates in different parts of the world. Most of these asylums are founded on the fact, now well established, that inebriety is a disease of the brain and nervous system. The use of alcohol in many cases may be only a symptom, in other cases alcohol starts up a train of degeneration which has been inherited, and in all cases there is progressive dissolution of the brain and nervous system, that can easily be reached by medical treatment addressed to the entire

system. The removal of alcohol is only one factor in the treatment, the removal of the causes will always be followed by the cessation of the desire for spirits. All treatment and remedies addressed to one state or condition of the body fail, for the reason that inebriety is not a local desire, and does not come from the use of alcohol alone. Hence the true principle of treatment must include not only restraint, but limited freedom, together with all means known to science to build up and strengthen the entire system. In the largest and best asylums in this country and Europe all cases are treated as sick and diseased, the duration and degree of restraint is modified to meet the demands of each case, and the general treatment aims to remove the special and general causes which have brought on the disease.

It is a deplorable fact that all inebriate asylums are judged by the statements of incurables who have failed to be benefited by treatment. Judged from these criticisms no inebriate asylum could exist long. Those who are more or less cured in these asylums, disappear and never refer to them, or the benefits they have received. The criticisms of our work have been inspired in many cases by the incurables, while those who have been restored have been silent.

PRACTICAL NOTES.

EUCALYPTUS IN SCARLET FEVER.

The value of eucalyptus in destroying the infection of scarlet fever cannot be too widely recognized. On October 20 I saw a nurse in a family where there were three young children. She had the rash over her chest and arms, the complaint having commenced about thirty-six hours previous. She was removed to the hospital, and Tucker's eucalyptus disinfectant was ordered to be freely used in the nursery, the children being kept in an atmosphere strongly impregnated with it for three days and nights; after that they were allowed out during the day, but the disinfectant was continued in the nursery for four or five days longer, when they were considered safe.

On October 27th, I saw a girl about 11 years of age, whose sister had been sleeping with her. She had had sore throat for about two days, and the rash was fully out. The sister was not allowed to sleep with her, but she spent most of her time in the room during the next three days, when the new Act came into force, and they were separated. Here the disinfectant was rubber over the skin of the whole body night and morning for three days, afterwards at night only; the emulsion was administered, and the disinfectant freely sprinkled over the bed and about the room. The girl had a severe attack of fever, had rheumatism in her wrists and ankles for a few days. The desquamation was finished about the fifteenth day, and there was no appearance of albumen in the urine. The sister did not develop

the disease, although exposed to the infection for five days, and three other children in the house did not take it. There was no carbolic or other sheet used over the door, the disinfection of the patient in the way described being sufficient to prevent any of the poison escaping from her.

It is to be hoped that others will try this method of disinfection, as, if it is as effectual in all cases as I have found it in all so treated during the last six months, there is every reason to believe that the infection of scarlet fever may be arrested in every case.—J. Brendon Curgenven, M.R.C.S., *British Med. Journal*.

MENTHOL IN LARYNGEAL PHTHISIS.

Twenty cases, most of them of a severe type, treated with menthol applications, furnished the author ground for believing that this is a valuable agent in tubercular laryngitis. The drug was dissolved in fluid cosmoline in the proportion of a drachm or a drachm and a half to the ounce, and applied by means of a laryngeal syringe, or in the form of spray, by a nebulizer or vaporizer. In nearly all cases the subjective symptoms and the local appearance improved. In no case did complete healing of an ulcer take place. In this respect the author's experience does not bear out the representations of Rosenberg and others. Three propositions are offered: 1. spontaneous cure of a tubercular ulcer of the larynx may occur; 2. a simple erosion or ulceration may be mistaken for a tubercular ulcer; 3. the best results from local treatment of the larynx may be expected in cases of incipient or limited pulmonary disease, and in primary laryngeal tuberculosis.—Dr. Chas. H. Knight, *Journal of Laryngology*.

THE USE OF MENTHOL IN THE UPPER AIR PASSAGES.

The drug controls superficial inflammation; that is an analgesic, and second application can be made in increasing strength without discomfort; that it is destructive of some of the low forms of life, especially the bacillus tuberculosis, and that is a valuable antiseptic in nasal surgery. It has an important place in the treatment of atrophic conditions. It can be used in strength of from one to fifty per cent., dissolved in oil. The oleum petrolia the author considers the best for the purpose of dissolving the drug. It can be applied directly by cotton application, or by means of the spray, or by vaporization. The direct method answers best in the pharynx, the spray and vapor for the nose and larynx. Five cases of laryngeal phthisis following upon disease of the lungs were also reported, in which the menthol treatment gave satisfactory results, the local conditions improving rapidly under its use.—Dr. F. H. Potter, *Journal of Laryngology*.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

*Stated Meeting, May 1, 1889.*DR. THOMAS E. MCARDLE, VICE-PRESIDENT,
IN THE CHAIR.

DR. S. C. BUSEY presented

A SPECIMEN OF GENERAL CANCER, WITH A HISTORY OF THE CASE.

The man was 58 years old. Dr. Busey had attended his family for ten years, but rarely saw him, professionally, as he preferred to consult some physician who would not insist upon his orders being carried out. In 1887 he had attended him for acute desquamative nephritis, from which he entirely recovered. From that time he had no knowledge of him until last January (23d), when he came to his office at night. In November, 1888, while on a visit to New York, he suffered from violent pains in the left lumbar region, which at times extended to the left iliac fossa, and obstinate constipation. For this condition he took drastic cathartics without any relief. After he returned home he was under the care of several different physicians, none of them being members of this society. He continued to suffer from these attacks and constipation, and finally his appetite became bad. The last physician treated him for rheumatism and applied electricity without relief. From the symptoms Dr. Busey concluded that he had some digestive disturbance, and upon a careful physical examination detected a tumor the size of a fist to the left of the navel, which was immovable and could be grasped by the hand. He presented a cancerous cachexia. He kept him under observation for two weeks and then had Dr. Thompson see him in consultation. They reached the conclusion that the tumor was malignant, and agreed to aspirate the following Sunday. Aspiration was performed without result. They then concluded to let him alone for four weeks. At the end of this time the tumor was as large as a child's head, but no fluctuation was detected, although it was thought that it might contain fluid. The question of operation was considered, but neither Dr. T. nor himself would accept it. As the disease progressed the evidences of cancer became more marked and he died April 24th. The pain was mainly confined to the left iliac fossa. The left leg became œdematous, and during the last three weeks of life he suffered from intense dryness of the mouth, which was his most distressing complaint. He never had much pain, and a dose of paregoric at night was all the analgesic required. Constipation was obstinate, but was finally relieved by glycerine suppositories. He died from exhaustion.

Dr. D. S. Lamb made the necroscopy. Body

much emaciated. All the tissues somewhat blanched from the embalming fluid. Firm pleuritic adhesions at apex of each lung; pleura of each lung; especially the upper lobe showed many small, firm, flat, white patches of thickening; multiple fibroma; apex of each lung much contracted and in section showed abundant small, hard, pigmented bodies, possibly obsolete tubercle; these have not been examined microscopically. The pulmonary artery of the lower lobe of the right lung was stuffed throughout with clots, some dark, others pink in color. A few small purulent cavities in upper lobe of right lung. Heart weighed only eight ounces; fatty degeneration of mitral valve; more thickening of aortic valve. Liver weighed fifty ounces; showed many superficial watery cysts and soft masses of cancer the size of a pea to a walnut, some of them intermixed with blood. Spleen small; pancreas normal. There was a large mass in abdomen, left side, below level of umbilicus, composed of coats of intestine united together by soft, granular material, encephaloid cancer, much intermixed with blood and continuous, with firmer portions of some in the subperitoneal tissue over the left brim of the pelvis. This mass was adherent firmly to abdominal wall. The intestinal peritoneum in places showed rounded, soft, pinkish thickenings, also encephaloid cancer. The right supra-renal capsule was normal; the left contained a yellowish, firm, oval cancerous mass the size of a marble. The right kidney normal; the left weighed only two and one-half ounces and showed many small superficial watery cysts, and the pelvis was much dilated from pressure below upon the ureter. Prostate gland enlarged.

A case of general cancer, primary, I think, in the subperitoneal tissue, secondary in the other situations mentioned. The microscopical examination was made by Dr. Wm. Gray, of the Army Medical Museum.

DR. J. FORD THOMPSON: At the first meeting they had agreed that this was not a case for operation. He had recently seen a similar case with Dr. Mauss and had refused to operate. He would not always refuse to operate when the tumor was movable and was confined to a portion of intestine and mesentery which would not necessitate resection. The surgeon determines the conditions and throws out doubtful cases. It requires good judgment to reject cases unsuitable for operation.

DR. J. DUDLEY MORGAN read a paper on

ACUTE ŒDEMATOUS UVULITIS.

Most authors, in writing of acute œdema uvulæ, or acute uvulitis, affirm or infer that the œdema is caused by or associated with cold, and that the pharynx and tonsils will show a sympathy of congestion somewhat proportionate to that acutely present within the uvula.

Mackenzie¹ says: "Some cases where the pharynx is inflamed the violence of the morbid action appears to be expended on the uvula." Sajous² speaks only of relaxed throat and uvula, which may be caused by chronic catarrhal inflammation; and Heath³ of œdematous uvula due to inflammation and commonly found in any acute inflammation of the throat. Ingals⁴, in his lectures on the throat, does not mention the subject. Browne⁵, of London, in his recent edition, writes to the point; he says: "The uvula becomes suddenly red, swollen and infiltrated, with comparatively little hyperæmia of the neighboring parts. Cohen⁶ notes that œdema uvulæ sometimes occurs during the progress of acute or chronic sore throat, and the organ may acquire the size of a large bean or even that of a plum; and will provoke spasms of impending asphyxia.

The case in question seems to be a unique one and a striking exception to the doctrine laid down by most of the authors consulted. *Case:* Mr. M., a patent attorney, aged 40 years, was on the morning of April 14th in perfect health and had never been treated for throat trouble. In the afternoon, which was clear and balmy, he experienced no symptoms of cold or catching cold. Later in the same evening his throat began gradually and steadily to fill up, and within four or five hours spasms of suffocation attacked him. Patient described it as though his tonsils had fallen and were movable in the throat. Could not swallow anything solid, and liquids with great difficulty. Had no fever, tongue moderately coated, and his daily regulations of life were and had been good. He had eaten a rather heavy dinner about 8 o'clock and had smoked and drunk a great deal, but not to excess. It was not until near 12 o'clock at night that he commenced to feel uncomfortable about his throat. Early the next morning he came to my office, asking to be seen immediately.

Inspection by aid of strong reflected light revealed a limited but intense palatine congestion and an enormous œdematous uvula. The tonsils, palatine folds and pharynx were not hyperæmic, and the patient complained of no pain on pressure externally against the tonsils, nor were they at all prominent to the touch. The uvula was fully the size of the thumb in thickness, and on inspiration and expiration would flap back and forth, sometimes lying as a great pendulous mass on the tongue, and then, on hasty and forcible inspiration, dropping deep in the fauces, setting up a succession of paroxysmal coughs.

With the aid of Ingals' dressing forceps I

grasped the swollen uvula in expiration at its most pendulous portion and made a number of stabs with the bistoury, but finding only little bleeding I used a large needle, held it firmly with the needle-holder, thrusting the point many times deep into the tissues. The oozing of blood and serum was so little, and the swelling having diminished to such a slight degree, after waiting some fifteen or twenty minutes more I determined to try the effect of a strong solution of cocaine. I therefore painted the whole uvula with a 15 per cent. and reapplied within ten minutes. The engorgement now commenced to immediately disappear and was reduced considerably before the patient left the office, he expressing himself as feeling freer and more comfortable about the throat. I ordered a dose of Rochelle salts, a gargle of tannin, aconite and rose-water, to use no warm drinks and to take little or no food, and that of a liquid character.

The same day, six hours after, the patient returned to the office, expressed himself better, and on inspection I found the swelling had subsided fully one-half. Reapplied the solution of cocaine and continued liquid diet. Next day the uvula was almost normal in size; throat perfectly comfortable; patient discharged cured.

I was led to the trial, in this affection, of cocaine, knowing full well its power of readily reducing the turgescence of the mucous membrane in acute affections of the nasal passages. Its use in acute œdematous uvulitis may have been specially recommended; if so, I have failed to find mention among the number of works I have consulted. Laffont⁷, of Paris, speaks of the local effect of cocaine in increasing the functional activity of the sympathetic nervous system, causing contraction of non-striated muscular fibres. Bosworth⁸ claims that cocaine produces rigid contraction of unstriated muscular fibres, and that, topically applied, it will so constrict the blood vessels of an acutely inflamed mucous membrane as to arrest the disease. Wood's⁹ experience is that in some acute mucous inflammations the primary bleaching is permanent.

To explain this rapid and localized œdema and equally rapid and permanent disappearance, I believe we must look to the vaso-motors as being greatly at fault. The uvula is in direct communication with the stomach, through the sympathetic system. Flint¹⁰ says there can be no doubt that the sympathetic branches contain filaments capable of modifying the calibre of blood-vessels. We can trace the nervous origin by many routes; one among them is through the descending palatine branches into Meckel's ganglion, thence to the sympathetic root, on to the carotid and gas-

¹ Mackenzie, M., "Pharynx, Larynx and Trachea," New York, 1880.

² Sajous, "Disease of Nose and Throat," Philadelphia, 1886.

³ Heath, C., in "Ashurst Encycl. Surg.," New York, 1888.

⁴ Ingals, F., "Disease of Throat, Chest and Nasal Cavities," New York, 1881.

⁵ Browne, L., "Disease of Throat," 2d ed., Philadelphia, 1887.

⁶ Cohen, "Disease of Throat and Nasal Passages," New York, 1880.

⁷ Compt. Rend. Soc. de Biol., Paris, 1887, 8s.

⁸ N. Y. Med. Record, Nov. 15, 1884.

⁹ Wood, H., "Therapeutics, its Principles and Practice," 7th ed., Philadelphia, 1888.

¹⁰ Flint, A., "Human Physiology," New York, 1882.

tric plexus. But the most direct and easily explainable route is by the afferent branches of the pneumogastric, joining with the filaments to the superior cervical ganglion, branches from which ganglion, forming a plexus on the external carotid artery, are distributed to the ramifications of this artery.

I regard this case as an illustration of a phenomenon acting reflexly through the sympathetic system, localized in its manifestation and operating from the stomach, a function not foreign to the sympathetic nor *contra ideas*, when we remember the important influence which the sympathetic always plays upon nutrition, calorification and secretion.

The rapid course which this disease ran shows, first, how the stomach may reflexly and acutely act upon the upper air passages; second, that by giving rest to the stomach and causing depletion, local and general, we effected a termination of this disease as hastily as it was acutely manifested.

DR. MURRAY: Œdema of the uvula without general congestion of the surrounding parts is not common. It does not occur in Bright's disease, and is found among the sequelæ of the exanthemata. In the aged it is also seen, the result probably of anæmia. The case presented, as interpreted by Dr. Morgan, was in his experience unique. Reflex irritation is the most interesting; the list of disorders directly referable to this agency is receiving constant additions. In the case before us Dr. Morgan has traced with accuracy the several channels through which the reflex may have come, but he has not clearly established the fact that it did not come through any of them; and Dr. Murray did not think it possible to do so. He was inclined to believe that the condition described by Dr. Morgan was directly due to the local irritation produced by the alcohol, which his patient had swallowed the night before. In the beginning there probably was general congestion. The uvula for obvious reasons being more congested than the surrounding parts stasis occurred. When the patient presented himself for treatment he had been moving about for several hours, and had possibly indulged freely in ice water. The general congestion had disappeared, leaving the œdematous uvula to tell the tale. The treatment instituted met all the indications and the result left nothing to be desired. Where there is much œdema the readiest means of getting rid of it is to clip a small portion from the most dependent part of the mucous membrane; if this is properly done it occasions no more soreness than scarification, and is more efficacious.

DR. KLEINSCHMIDT: The condition could be explained upon the reflex theory advanced by Dr. Morgan or the more direct route mentioned by Dr. Murray—either would produce the same result. Either theory would account for the

promptness of relief by the treatment. Cases of œdema from alcoholic intoxication are not so uncommon, but they seldom consult a physician because the œdema passes off in a few hours under the ice water which is usually taken to allay the thirst following a debauch. He had seen two or three cases of enlarged uvulæ with symptoms of suffocation. He does not think the uvula is the only part congested. If the reflex theory was to be adopted, he thought he could trace a route more direct than that given by Dr. Morgan, namely: by way of the glossopharyngeal of the petrous ganglia, which was connected by the filament with the superior cervical ganglia, thence the vasomotor passed to the carotid flexus and supplied the parts involved.

THE PRESIDENT said he had seen a case of scarlet fever in which the throat symptoms had subsided; he allowed the patient to take some ginger ale and the next morning he found the uvula in the condition described by Dr. Morgan. He snipped off a small piece of the mucous membrane and it promptly healed. In a weak and debilitated old lady he found an enormous elongated uvula. He pulled it through her teeth and cut off fully 2 inches of the mucous membrane and she was well in 24 hours.

DR. THOMPSON saw a great many cases of elongated uvulæ with symptoms of suffocation. Not long since a physician came to his office at night because he feared he would suffocate before morning. The uvula was enlarged and elongated. He snipped off a piece of the mucous membrane and relieved him. It was not necessary to cut off much. If we cut off mucous membrane in proportion to the size of the diseased part, we cut off too much, so that when cicatrization takes place there is not much uvula left. He had never tried cocaine, as snipping answered his purpose. He usually used two instruments: Gross' forceps and uterine curved scissors. It was better to cut off a small piece of the mucous membrane upwards and anteriorly.

DR. MURRAY thought the operation best as performed by Dr. Thompson, with scissors and forceps.

DR. HAGNER thought it better to cut upward and backward, to prevent the food from coming in contact with the raw surface.

DR. MORGAN thought cocaine better in women and children, and in nervous persons who would object to the knife.

DR. J. FORD THOMPSON reported

A CASE OF CASTRATION FOR HÆMATOCELE, and exhibited the specimen. Dr. Thompson thought the specimen of sufficient interest to present because the opportunities of seeing such pathological specimens are rare. Dr. M. Muncester had brought the man, aged 27, to him for a tumor of the right testicle. On examination it presented

all the symptoms and had the appearance and history of hydrocele. It was of six years' duration; he attributed it to a fall, but it was slow in its growth, having taken six years to reach its present size. A few months ago he got married, when it occurred to him that he would have something done for it. The tumor was pyriform in shape; no enlargement of the cord; there was considerable induration, which he attributed to thickening of the sac. He detected fluctuation. He introduced a trocar above the middle of the tumor, but nothing came away; he withdrew the trocar, and upon palpating the lower part he detected fluctuation, and again introduced the trocar and drew off about a drachm of a peculiar looking fluid, which the patient likened to "tomato catsup." He now said it was a hæmatocele, and would require a more thorough operation. He had lost all sensation on this side three or four years ago. April 21, he operated under anæsthesia. As soon as the patient became anæsthetized the tumor felt so solid and indurated with spots here and there, of fluctuation, that he changed his view and believed it a sarco-cystocele. He then made a large incision through a dense tissue, which he supposed to be the tunica vaginalis, but which was the tunica albuginea. He dissected this off and castrated, finding the cord normal. The sac was the tunica vaginalis enormously thickened, filled with coagulated blood, which had misled him. The tunica vaginalis was in very much the condition of an old aneurism. It would be seen that the remains of the atrophied testicle were imbedded in the wall of the tunica vaginalis.

The diagnosis in such cases is almost impossible without an incision.

In the treatment of such cases puncture amounts to nothing. Then what is the next best treatment? In an ordinary case of hæmatocele the older writers advised to lay open the sac and let it heal by granulation; and the more recent, to dress it antiseptically. In such cases as this the operation he performed was far better. The other operation for such a case is Volkmann's, which would have made a long illness. The testicle was atrophied and useless to this patient, so there was no object in leaving it. In old men, or those past fifty, there is no question about the operation; in younger men, if the testicle is believed to be normal, it is better to dissect out the sac and let it fill by granulation.

Curling says: "Occasionally the blood is found converted into a solid fibrinous substance, of a yellow or fawn color, arranged in firm layers, similar to the coagula lining the sac of an aneurism.

Diagnosis.—In old cases in which the tunica vaginalis and its envelopes have become much thickened and indurated the tumor possesses so firm a character, feels so heavy and solid, that it

is very liable to be mistaken for a chronic enlargement of the testicle; and the diagnosis, at all times difficult, in some cases cannot be made out by the nicest manipulation of the most experienced hands."

Curling gives a personal case which, even better than mine, presents the difficulty of diagnosis in some old cases. A Portuguese, aged 26, consulted him—Curling—for disease of the right testicle. The organ was large, opaque, felt firm, weighed heavy, and afforded an indistinct sense of fluctuation. The enlargement had existed twelve years, but had grown a good deal lately. In expectation of finding fluid, he thrust a fine trocar into the upper part of the swelling, but nothing except a few drops of blood appeared. Mercury was then given to slight soreness of gums, with no effect. Being still impressed that fluid existed, he introduced the trocar into the lower part of the swelling, with the same result as before. A consultation was held over the case at the London Hospital. As a result of the consultation the tumor was strapped and iodide of potassium given for a fortnight; patient rather worse from treatment. At second consultation it was determined to remove the tumor by operation, thinking that it might be cystic. After careful manipulation the testicle could not be placed. An incision was made which passed through the displaced testicle and it was then castrated.

He also gave the notes of a case of death in an old man from opening the sac, which was so thick as to prevent its collapsing. In old men with thickened tissues castration is the best operation.

Erichsen says: If the tumor were of very large size, and the tunica vaginalis much thickened, hardened, and parchment-like, with adherent and laminated fibres, castration might possibly be required. He refers to such a case in which he castrated.

Dr. Thompson had seen a surgeon cut away the tunica vaginalis with the thermo-cautery in a case similar to his. He usually tapped a case of hydrocele and allowed the patient to walk home, but in this case he suspected something more and sent him home. In doubtful cases we should make an exploratory incision and be guided according to what we find.

DR. SMITH asked Dr. Thompson if hydrocele could have been differentiated by transmitted light in this case, or in one with such a thick sac?

DR. THOMPSON: No. He seldom used artificial light in diagnosing hydrocele, but depended upon palpation. If at the time of operation he failed to find fluid by the trocar he would make an incision.

DR. SMITH: This was the second diseased testicle that had been presented to the Society in twenty years. Six or seven years ago he presented a testicle which he had removed for tuber-

cular disease. He had some time previously operated on this man for hydrocele. Soon after he left the city. The tumor recurred and he consulted a surgeon, who stated that the hydrocele had returned; he tapped, but only got blood. Suppuration was then set up and the puncture would not heal. The man returned and consulted Dr. Smith. The testicle was removed and the man gained sixty or seventy pounds in weight. If the testicle had not been removed Dr. Smith believes this man would have died of tubercular disease. Dr. Smith thought that it was very singular that diseases of the analogous organs in the female were so much more frequent, and he did not know how to account for it. Women who abuse their sexual organs, as prostitutes, have ovarian disease requiring operation much less frequently than the virtuous. Why is it that the ovaries are so frequently diseased and the testicles so infrequently?

Dr. Thompson frequently operated on diseased testicles, but only presented unique specimens to the Society. This specimen was very uncommon, hence the interest in it.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Dr. Rockwell on the General Therapeutic Action of Electricity—Dr. C. L. Dana defends Static Electricity—Dr. H. D. Chapin on the Auriculo-Ventricular (presystolic) Sound, and Some Considerations on Cardiac Disease in Childhood.

It will perhaps be remembered that last spring Dr. M. Allen Starr, Clinical Professor of Diseases of the Mind and Nervous System at the College of Physicians and Surgeons, read a paper before the New York Academy of Medicine on "The Therapeutic Value of Electricity," the tendency of which was decidedly to undermine the confidence of the profession in this agent. At the last meeting of the Section on Practice of the Academy an opportunity was afforded to some of those whose views are at variance with those of Dr. Starr to defend it against the aspersions cast upon its good name.

On this occasion Dr. A. D. Rockwell, the well-known expert, read a paper on "The General Therapeutic Action of Electricity." At the outset he said that notwithstanding all that had been written upon electrical treatment, there existed so little correct appreciation of the physics of this agent that it became necessary to emphasize again and again the statement that electricity is not a simple, single manifestation of natural force, but a generic term including complex phenomena and a great variety of manifestations. Much, indeed,

was claimed for it; but it accomplished much and produced effects widely divergent, so that it was often of service in more or less opposite conditions. Later he expressed himself in the following very plain language: "When its therapeutic efficiency is denied, the inevitable conclusion at which those must arrive who have time and time again witnessed evidences of its power is, that he who fails in his results is deficient in his experience, is not sufficiently persistent, or has somehow failed in the technique of his applications."

Electricity, he said, was not only a stimulant of the most powerful character, but it was also a sedative which in certain cases was unexcelled. Furthermore, it was a tonic of a very high order, and to produce the tension of the nervous system and of the muscular fibres generally which would enable them to respond to their natural stimuli, the mechanical effects of the faradic current seemed to be especially applicable. Properly applied, it would not produce any appreciable muscular contractions, and yet it gave passive exercise to all the deeper-lying as well as superficial muscles. Aside from its purely mechanical effects, it was evident that even this current exerted some other and more subtle influence upon the nerves themselves; for by no purely mechanical means could we account for the numerous phenomena that followed its use in diseased conditions. General faradization might be said to be indicated, therefore, whenever a constitutional tonic influence was called for.

This law rendered the remedy as valuable to the general practitioner as to the specialist. For the tedious period of convalescence which often follows typhoid and other fevers there was no remedy that was comparable to it, and in a large number of conditions of depressed vitality electricity in some of its forms would prove of service. In addition to giving passive exercise to the muscles, it rendered more natural the processes of secretion and excretion, corrected circulatory disturbances, and afforded tone and strength to both nerve and muscle. With these general principles in view, he said, we cease to wonder that electricity is used and recommended for such a variety of diseases, and appreciate the injustice of the criticism which condemns it because it is claimed to be of service in so many different conditions.

Having spoken of some of its physical effects, he said that the chemical or electrolytic influences which are associated with electrical action were practically confined to galvanism. Its special utility was in the department of electro-surgery; but it was undoubtedly true that some electrolytic action occurs in all ordinary applications of galvanism to the body, while it was probable that it was a factor of more or less importance in making up the sum of electro-therapeutic effects.

In its influence over nutrition, however, Dr. Rockwell went on to say, the physiological effects

of electricity were perhaps the most important; the action of either current modifying physiological function in various ways. Having mentioned its influence over the salivary and mucus secretions, and its admirable effect in the condition known as dry catarrh, he stated that his experience had been that appetite was sharpened, digestion quickened, and constipation relieved, both by local and general electrical treatment, so rapidly as to make it pretty evident that the gastric, biliary and intestinal secretions were markedly affected by the action of the current on the nerves supplying the organs of digestion. These results had also been recently confirmed by Ziemssen by experiments on animals. Among those affections of the bowels in which electricity was quite certain to exercise a beneficial influence were defective innervation, atrophy of the muscular tissue, digestive atony, and the wide section of diseases comprehended under the name of hypochondriacal and neurasthenic. The effect of electricity in diminishing, and even arresting, the physiological activity of the organs of secretion and excretion was next considered, and the paper brought to a conclusion with some notice of its influence on absorption and its consequent practical value in relieving many hypertrophies, effusions and morbid growths.

At the conclusion of Dr. Rockwell's paper Dr. C. L. Dana read a short paper which was devoted to a defense of static electricity. A recent writer on electro-therapeutics and physics, he said, had referred to electricity as a form of energy. This was a fundamental error, and showed a lack of grasp of the subject which was truly elemental. Electricity was not a form of energy, but a condition of ether in a state of stress or motion. The same critic also spoke of "producing" electricity; which was as absurd as to talk of producing matter. In static electricity the electrical fluid or ether was in a state of strain, like a thin rubber band stretched to its utmost. When the strain was relieved there was a disruptive discharge, as when the elastic band broke. By using small Leyden jars which filled and discharged very quickly the current could be made almost continuous and would cause chemical effects. The static discharge occupied such an exceedingly brief space of time that its intensity or current strength was hardly measurable; but its voltage or electro-motor force was immense.

In describing its physiological effects he said that the muscular contractions caused by static electricity had been stated to be due to a purely mechanical effect, like that of a whip; but this he believed to be an erroneous view for the reason that the sparks caused contraction when applied directly to muscle, while in order that mechanical irritation should cause contraction of a whole muscle, it was necessary that it should be applied at the motor point.

As to its therapeutic uses, he believed that the special advantage of the static battery was in paralyses with some spastic element, as in hemiplegias and paraplegias. Aside from this he said its best results were in chronic muscular rheumatic and neuralgic conditions and in many sensory disorders. It had a specific æsthesia-genetic influence in certain cases; producing effects in a way similar to metallo-therapy—not by mental influence or suggestion. It had practically a very great value in dispensary clinics where a good many cases of paralysis had to be treated. In nervous clinics with few patients' and abundant medical attendance the faradic and galvanic battery might answer, and this might explain the indifference to static electricity by some of its critics; but in large dispensaries he considered it almost a duty to patients to have a battery which induced a prompt and efficient electrical treatment in all cases. "Our mastery of disease," Dr. Dana said in conclusion, "is not so great, or our means of attacking it so ample, that we can afford to ignore a single measure that will help us in the fight."

In continuing the discussion Dr. J. H. Gunning spoke particularly of the special value of static electricity in facial paralysis and of the faradic current as an emmenagogue.

At the same meeting Dr. H. D. Chapin read a paper consisting of two sections, the first being devoted to "The Auriculo-ventricular (presystolic) Sound," and the second to "Some Considerations on Cardiac Disease in Childhood." In speaking of the presystolic murmur due to mitral stenosis he said that in some cases it could only be detected after some exercise, and in making his examinations he was in the habit, therefore, of requiring the patient to first jump up and down a few times. The utility of such a precaution was shown by the fact that two individuals in whom he had found the murmur present had been able to secure first-class risks in life insurance companies; the murmur no doubt being imperceptible at the time the heart was auscultated by the medical examiners on account of the applicants being at rest. The prognosis in presystolic murmur he regarded as usually favorable.

In treating of cardiac disease in children he spoke of the well-known fact that rheumatism, ordinarily the cause of such disease, is apt to be very much less severe in children than in adults; the affection not infrequently escaping notice entirely. In his experience he had found that very often cardiac trouble does not occur with the first attack of rheumatism, and sometimes does not ensue until the child has had several attacks of the latter. He also spoke of the much greater tolerance of disease of the heart in children than in adults. In the treatment of such disease he laid stress on the prime importance of early interference and the insistence on complete rest.

In discussing the paper Dr. Andrew H. Smith said that he was not one of those who believe in the existence of a presystolic murmur distinct from the diastolic and having a mode of production and a significance of its own. There was, indeed, a presystolic murmur, but it was only a continuation of the diastolic murmur, reinforced by the contraction of the auricle. If the orifice were greatly narrowed, and especially if it was irregular, the flow of blood through it would cause a sound during the ventricular diastole and before the auricular systole. If, on the other hand, the orifice was less contracted and less irregular, the blood would pass through it silently until its flow was hurried by the contraction of the auricle; when a murmur would be developed. This supplement to the diastolic murmur he believed had no different significance from the latter, and he could see no reason for giving it an especial name. Dr. Smith said his experience coincided with that of Dr. Chapin as regards the tolerance of cardiac disease in early life, and stated that he had seen children who had had severe endocarditis complicated with very marked valvular lesions go on for years apparently suffering but little inconvenience.

Dr. A. L. Loomis said that he did not suppose that at the present day there was any doubt in the minds of auscultators as to the existence of a presystolic murmur. He had been accustomed to consider three classes of presystolic murmurs: the hæmic, the congenital, and those depending on chronic endocarditis. These murmurs were often independent of systolic murmurs, and sometimes were present in addition to the latter. He thought that, in general, we were apt to attach too much importance to cardiac murmurs. To be really of importance they must be accompanied by changes in the cavities and walls of the heart and in other parts of the system; and this was especially true as regards mitral disease.

Dr. E. G. Janeway said that for a long time some authorities hesitated to accept the existence of the presystolic murmur, on the ground that the auricle has not sufficient force to produce such a murmur. It could be positively demonstrated, however, that in reality very little force was required for this purpose. As regards the prognosis of mitral stenosis, his experience had led him to take a somewhat less hopeful view than had been expressed by Dr. Chapin and others.

Dr. J. Lewis Smith said that his experience coincided with that of others as to the comparative mildness of rheumatism in childhood, and he thought there could be no doubt that there were many "walking cases" of the disease. Parents would state that their children had not complained of pain, or if they did so, the circumstance was attributed to "growing pains," and regarded as a matter for congratulation, as indicating an increasing robustness of constitution.

So far from this being the case, however, such "growing pains" were too often the evidence of a condition which caused irreparable damage to the heart. The occurrence of rheumatism was thus frequently overlooked, and hence the opportunity was missed for the employment of treatment which might avert the impending danger of permanent cardiac disease. As to the matter of prognosis in the case of valvular lesions in children, he expressed the conviction that we are accustomed to regard such trouble in too favorable a light. He had found that in many cases dilatation and hypertrophy developed in the course of two or three years, and subsequently the cardiac disease terminated fatally. P. B. P.

Is Small-Pox Contagious before the Eruption Appears?

To the Editor:—A man afflicted with small-pox walked our streets one day last week, causing no small degree of popular and journalistic agitation. A prominent physician who had examined the case is reported as saying: "I do not know that small-pox is contagious in the first three or four days, before the eruption comes out."

I can assure the profession that this malady is contagious in the pre-eruptive stage, and will now adduce a case in point: One night during the year ending July 1, 1872, a young German clerk sought admittance to the Long Island College Hospital, Brooklyn, N. Y. The Superintendent, William V. Blower, arose from his bed to admit the patient, but although not a medical man himself, upon seeing and questioning him he suspected the malady might be a contagious one, and as such were not admissible, he awoke me for advice. Although there was no eruption, at first sight I was convinced the disease was small-pox. The patient's repeated declaration that the only pain he had was a most excruciating pain in the left breast did not swerve me one iota from the diagnosis I had made, and I have always believed in regard to this case that the patient well knew what his malady was—had probably in his mind a distinct history of his exposure, but deliberately lied to avoid being sent to the Flatbush pesthouse.

We sent him to the attic accompanied by a nurse named Emanuel Pinn, aged 18 or 20 years, and at daylight called in our counsel—Prof. S. D. Armor, Drs. William H. Dudley and A. Mitchell. The counsel said: "We agree with you, doctor, that this man has small-pox, yet do not feel justified in sending him to the pesthouse until we see or feel some signs of an eruption coming." Three hours later they came again; there was still no eruption *visible*, but the *shotty* feeling (the feeling as if small gunshots were distributed there) was quite perceptible in the skin of the forehead.

This patient was then sent to Flatbush, and a most serious case it proved, but my recollection is that this patient recovered. Not so with Emanuel Pinn, the man who kept him company a few hours in the attic before the eruption appeared—for I repeat, *there was no eruption visible when the patient left us for Flatbush.* At the expiration of twelve days from the date of his exposure Pinn developed small-pox, was likewise sent to Flatbush, and died there of that disorder. Very respectfully,
T. J. HUTTON, M.D.

716 Chicago Opera House, November 18, 1889.

NECROLOGY.

Dr. T. B. Harvey.

Dr. Harvey, one of the best known and highly prized physicians in the country, died very suddenly at his home in Indianapolis, Ind., on the evening of Dec. 5. He was sixty-two years of age, and was actively engaged in the practice of his profession. In the presence of his class, and in the midst of a clinical lecture, in connection with the Indiana Medical College, he was suddenly stricken with cerebral hæmorrhage. He was saved from falling to the floor by the students surrounding him, and was placed in the clinic chair in which he was about to examine a patient. He was immediately conveyed to the adjoining library, still holding with firm grasp the notes of his lecture, and making desperate efforts to continue his address. Almost immediately, however, he became unconscious, and continued so till his death. As a successful medical teacher, Dr. Harvey was widely known and deservedly popular as a consulting physician and surgeon, especially in the surgical diseases of women. His services were greatly valued in the Mississippi valley. He was intimately known in the National, State and local medical societies, and everywhere sincerely esteemed. The sympathies of the profession will be freely accorded to his family, thus suddenly bereaved.

BOOK REVIEWS.

THE CEREBRAL PALSIES OF CHILDREN. A Clinical Study from the Infirmary for Nervous Diseases, Philadelphia, by WILLIAM OSLER, M.D., F.R.C.P., London, Professor of Clinical Medicine in the University of Pennsylvania, etc. Philadelphia: P. Blakiston, Son & Co. 1889. Pp. viii, 103.

This valuable contribution to the subject of cerebral palsies in children is based upon a study of 151 cases of the diseases under consideration. These are divided as follows: Cases of hemiplegia, 120; cases of bilateral hemiplegia, 20; cases

of paraplegia, 11. The writer claims that the amount of material upon which his study is based is much larger than has heretofore been analyzed from any clinic. The cases are grouped in such manner as to illustrate the special etiological factors which appear in each series of cases. The clinical reports themselves are models of terseness and clearness of presentation. No attempt has been made to go into the details of etiology and pathological anatomy, the report being essentially a clinical one. The author is deserving of much credit for the admirable manner in which his subject is offered.

ELEVENTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF THE STATE OF RHODE ISLAND FOR THE YEAR ENDING DECEMBER 31, 1888.

A reference to the index of this volume will serve to give a good idea of the excellent character of the work being done by the State Board of Health of Rhode Island. The topics are as follows: General Report; Report of the Secretary; Health of the State; Table of Comparative Prevalence of Diseases, five years; Reports of Medical Correspondents; Prevalence of Acute Diseases in the Towns; Reports of Town Clerks in Relation to Sanitary Improvements; Reports of Health Officers; Meteorology; Cattle Commission; Typhoid Fever and its Prevention; Scarlet Fever and its Prevention; Tuberculosis and its Prevalence among the Neat Cattle of Rhode Island; Public Statutes, chap. 83; Additions to the Library.

The articles on typhoid and scarlet fevers and tuberculosis in cattle are of much interest and of great practical value.

THE MEDICAL REGISTER OF NEW YORK, NEW JERSEY AND CONNECTICUT, 1889-90. Edited by WILLIAM T. WHITE, M.D. New York: G. P. Putnam's Sons, 1889.

This serviceable little annual, the twenty-sixth of its series, is always welcome. It is a credit to the editor, Dr. White, for his untiring efforts to make it a correct reflection of the *annus medicus*, as each flows by, of the American metropolis and a large adjoining territory. In addition to being a model of completeness and accuracy, it has a healthful policing influence over the quackish elements in medical practice. There has not been a year during the past twenty-six wherein it has not been threatened by some of the "irregulars," or by some whose names are omitted from registration "for cause," but no serious detriment has yet befallen the book from these threats. The book is full of information regarding the hospitals, medical colleges and societies of New York and vicinity. It is useful, reliable, and its *morale* is good, and on these grounds it is thrice welcome.

MISCELLANY.

HEALTH IN MICHIGAN.—For the month of November, 1889, compared with the preceding month, the reports indicate that tonsillitis, erysipelas, measles, membranous croup and small-pox increased, and that diarrhœa, remittent fever, typho-malarial fever, typhoid fever, whooping-cough, dysentery, puerperal fever, cholera morbus and cholera infantum decreased in prevalence.

Compared with the preceding month, the temperature in the month of November, 1889, was much lower, the absolute humidity was less, the relative humidity was more, the day ozone was less and the night ozone was slightly more.

Compared with the average for the month of November in the three years, 1886-88, inflammation of bowels, measles and puerperal fever were more prevalent, and cerebro-spinal meningitis, cholera infantum, cholera morbus and typho-malarial fever were less prevalent in November, 1889.

For the month of November, 1889, compared with the average of corresponding months in the three years 1886-1888, the temperature was higher, the absolute humidity and relative humidity were more, and the day and night ozone were less.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of November, 1889, at 69 places, scarlet fever at 71 places, typhoid fever at 83 places, measles at 18 places, and small-pox at 2 places.

Reports from all sources show diphtheria reported at 9 places more, scarlet fever at 17 places more, typhoid fever at 30 places less, measles at 3 places more, and small-pox at 2 places more in the month of November, 1889, than in the preceding month.

LETTERS RECEIVED.

W. C. Robey, Holy Cross, Col.; Waite & Bartlett Manufacturing Co., New York; Bernam's Newspaper Agency, Ann Arbor, Mich.; Dr. C. A. Rust, Saginaw, Mich.; Dr. A. E. Simpson, Charleston, Mo.; Dr. A. B. Newkirk, Los Angeles, Cal.; Dr. John S. Coleman, Augusta, Ga.; Dr. James Tyson, Philadelphia; Dr. J. W. Breedlove, Fort Smith, Ark.; Dr. Wm. S. Stewart, Dr. A. L. Hummel, Philadelphia; Dr. L. H. Baker, Payson, Ill.; Dr. C. R. Marke, Bloomington, Ill.; Dr. S. Loughton, Bangor, Me.; Dr. B. F. Spangler, York, Pa.; The Commercial Bank of Minneapolis, Minn.; Century Chemical Co., St. Louis, Mo.; Dr. Joseph Eastman, Indianapolis, Ind.; I. Haldenstein, Harold P. Brown, New York; Dr. C. H. Hobbs, Denton, Tex.; Dr. O. Eastland, Wichita Falls, Tex.; Dr. E. T. Shelby, Atchison, Kan.; Dr. J. G. Weaver, Strasburg, Pa.; Dios Chemical Co., St. Louis, Mo.; Codman & Shurtleff, Boston; Woman's Medical College, New York; Dr. G. D. Stahley, Gettysburg, Pa.; J. Walter Thompson, New York; Dr. Albert M. Jones, Eaton, O.; Republican Printing Co., Cedar Rapids, Ia.; Dr. William Mackie, Milwaukee, Wis.; Dr. Samuel B. Rowe, Rolla, Mo.; Dr. Walter Channing, Brookline, Mass.; Imperial Granum Co., New Haven, Conn.; Dr. Joseph Price, Philadelphia; T. W. Hannaford, London, Eng.; Dr. H. Tupper, Bay City, Mich.; Frank S. Billings & Co., Chicago.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from November 30, 1889, to December 6, 1889.

Major William D. Wolverton, Surgeon U. S. A., Ft. Douglas, Utah, is hereby granted leave of absence for one month, to take effect on or about December 18, 1889, with permission to apply at Hdqrs. Div. of the Missouri for an extension of seven days. Par. 2, S. O. 114, Dept. of the Platte, November 30, 1889.

Capt. John J. Cochran, Asst. Surgeon U. S. A., is granted leave of absence for fifteen days, to commence about December 1, 1889. Par. 8, S. O. 272, Div. of the Atlantic, November 27, 1889.

By direction of the Secretary of War, Capt. James E. Pilcher, Asst. Surgeon, is relieved from duty at Ft. Wood, New York Harbor, and will report in person to the commanding officer, Ft. Clark, Tex., for duty at that station, reporting also by letter to the commanding General, Dept. of Texas. Par. 3, S. O. 276, A. G. O., November 26, 1889.

First Lieut. R. R. Ball, Asst. Surgeon, Ft. Riley, Kan., will proceed to Ft. Sill, I. T., and report to the commanding officer for temporary duty at that post. Par. 2, S. O. 173, Dept. Mo., November 21, 1889.

By direction of the Secretary of War, Capt. John de B. W. Gardiner, Asst. Surgeon, will be relieved from duty at Ft. Reno, I. T., upon the arrival at that post of Capt. James C. Merrill, Asst. Surgeon, and will report in person to the commanding officer, Ft. Supply, Ind. Ter., for duty at that post. Par. 8, S. O. 279, A. G. O., November 30, 1889.

Capt. Walter D. McCaw, Asst. Surgeon U. S. A. (Ft. McPherson, Ga.), is hereby granted leave of absence for fifteen days. Par. 3, S. O. 276, Div. Atlantic, December 3, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending December 7, 1889.

Surgeon J. L. Neilson, detached from the U. S. S. "New Hampshire" and ordered to the U. S. S. "Portsmouth." P. A. Surgeon H. G. Beyer, detached from the U. S. S. "Portsmouth" and placed on waiting orders.

Surgeon C. A. Siegfried, detached from the Naval Station, New London, Conn., and ordered to the "New Hampshire."

P. A. Surgeon Jno. H. Hall, ordered to the Naval Station, New London, Conn.

Asst. Surgeon I. W. Kite, detached from the Naval Hospital, Philadelphia, and ordered to the Naval Hospital, Pensacola, Fla.

Surgeon J. W. Ross, detached from the Naval Hospital, Pensacola, Fla., and placed on waiting orders.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending November 30, 1889.

Surgeon C. S. D. Fessenden, to inspect unserviceable property at Cincinnati, O. November 18, 1889.

Surgeon R. D. Murray, granted leave of absence for thirty days. November 30, 1889.

Surgeon George Purviance, detailed as chairman Board of Examiners. November 20, 1889.

Surgeon J. M. Gassaway, granted leave of absence for twenty-nine days. November 13, 1889.

Surgeon John Godfrey, detailed as member Board of Examiners. November 20, 1889.

Surgeon Fairfax Irwin, detailed as recorder Board of Examiners. November 20, 1889.

P. A. Surgeon H. R. Carter, granted leave of absence for fifteen days. November 27, 1889.

Asst. Surgeon Seaton Norman, ordered to New York Marine-Hospital for temporary duty. November 21, 1889. To examination for promotion, November 22, 1889.

Asst. Surgeon J. B. Fattic, ordered to examination for promotion. November 22, 1889.

Asst. Surgeon F. C. Heath, ordered to examination for promotion. November 22, 1889.

Asst. Surgeon G. M. Magruder, ordered to examination for promotion. November 22, 1889. Granted leave of absence for twenty-seven days. November 29, 1889.

Asst. Surgeon T. B. Perry, granted leave of absence for twenty-five days. November 29, 1889.

Asst. Surgeon J. O. Cobb, granted leave of absence for thirty days. November 29, 1889.

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No. 25.

ORIGINAL ARTICLES.

CHANGE OF COLOR IN THE HAIR FROM THE INTERNAL USE OF PILOCAR- PIN. EXHIBITION OF SPECIMENS.

*Read in the Section of Dermatology and Syphilography, at the Fortieth
Annual Meeting of the American Medical Association,
June, 1889.*

BY D. W. PRENTISS, M.D.,
OF WASHINGTON, D. C.

In the *Phila. Med. Times* of July 2, 1881, I published a case entitled "Remarkable Change in the Color of the Hair from Light Blonde to Black in a Patient while under Treatment by Pilocarpin. Report of a Case of Pyelo-Nephritis, with unusually prolonged Anuria." This was a case of a lady, 25 years of age, and the drug was used to relieve the uræmic symptoms resulting from the anuria, which latter was extreme.

A record was kept of the amount of urine excreted, and this shows that on one occasion, from December 16 to December 23, a period of seven days, not a drop of urine was passed, and that from January 22, 1881, to February 2, eleven days, there was total anuria.

From January 22 to February 11 (twenty-one days), but 36 grams, or a little over 2 ozs. of urine were passed. During this time the catheter was used twice daily. The uræmic symptoms were very marked and distressing, consisting of dry skin, continual vomiting, severe headache, insomnia, muscular twitchings, confusion of vision, delirium, and threatened convulsions. Hot baths and hot packs did not cause sweating, and gave no relief.

On December 16, 1880, treatment of pilocarpin hydrochlorate hypodermically was commenced, the dose given being 1 centigram (gr. $\frac{1}{6}$). The effect of this was very prompt, and the sweating and salivation produced most profuse. The relief

to the uræmic symptoms was complete, the patient falling into a quiet sleep as soon as the effect of the drug ceased, and sleeping all night, awaking in the morning bright and refreshed. The pilocarpin was thus used twenty-two times from December 16, 1880, to February 22, 1881, requiring 35 or 40 centigrams.

As the patient became accustomed to the medicine it was found necessary to give 2 centigrams at a dose. After February 22 she began to improve, and no more was required.

Change in Color of the Hair.—All her life up to November, 1880, the hair was a light blonde. Four specimens of the hair were sent to the editor of the *Phila. Med. Times*, with the report of the case, for his inspection, and were as follows:

"1. November, 1879.

"2. November, 1880.—On both dates the color was the same, a light blonde, with tinge of yellow.

"3. January 12, 1881.—A chestnut brown; and

"4. May 1, 1881.—Almost a pure black."

The growth of hair was also more vigorous and individual hairs thicker.

I believed at the time, and still believe, that this change of color was caused by the pilocarpin. The lady is still at this date (March 10, 1889) under my observation. Her hair is now dark brown, having returned to that color from black. The full report of this case can be found in the *Phila. Med. Times* for July 2, 1881.

The following case is reported, as adding another to the evidence that jaborandi will produce the effect mentioned under favorable circumstances:

Mrs. L., æt. 72 years, suffering from Bright's disease, contracted kidney. Hair and eyebrows have been snow-white for twenty years. Suffered greatly from itching of the skin, due to the uræmia of the kidney disease. Skin harsh and dry.

For this symptom fld. ext. of jaborandi was prescribed, with the effect of relieving the itching. It was taken in doses of 20 or 30 drops, several times a day, from October, 1886, to February, 1888.

During the fall of 1887 it was noticed by the nurse that the eyebrows were growing darker, and that the hair of the head was darker in patches. These patches and the eyebrows continued to become darker, until at the time of her death they were quite black, the black tufts on the head pre-

NOTE.—The specimens presented were as described in the paper. In addition a specimen of the hair of the lady was shown, taken this month (June, 1889), and was nearly black. Dr. Prentiss also showed specimens of the ermine in winter pelt (pure white), summer pelt—white and brown—and in process of change between the two. And also specimens of the bobolink (*Dolichonyx Orizivorus*), showing similar changes.

WM. T. CORLETT,
Sec'y of the Section.

senting a very curious appearance among the silver-white hair surrounding them.

At the time the first of these cases was reported, the facts as stated were received with considerable incredulity, the editor of one well-known Western medical journal openly refusing them credit. Others preferred the charge that the lady had formerly bleached her hair, and that when this was no longer possible her hair returned to its original color.

In reply to these "suggestions," I will only say that the facts are known to scores of people at her home in Washington, D. C., and are entirely beyond question.

As illustrating the ubiquity of the daily press, and the ease with which all sorts of nostrums, valueless or otherwise, may be brought into notice through the newspapers, and how easy it is to make such a matter profitable to the advertiser, I mention an incident in connection with the case just reported:

It seems that some enterprising newspaper man became cognizant of the case, and put a short notice in a New York daily paper, to the effect that a drug had been discovered that would turn white hair black, and make hair grow on bald heads, giving my name as being connected with the Smithsonian Institution.

This paragraph must have been extensively copied in newspapers both throughout this country and abroad. The first intimation I had of its existence was an avalanche of letters from all parts of the country wanting information, some offering money for the receipt, others enclosing money in advance; which latter, be it known, I at once returned.

One from London, England, enclosing the half of a two-dollar bill, with the information that the other half would be speedily forthcoming on receipt of the formula or medicine.

These are the only cases thus far reported in which pilocarpin has been supposed to change the color of the hair.

In 1879 Dr. G. Schmitz,¹ of Cologne, reported two cases in which pilocarpin stimulated the growth of the hair in alopecia. One patient, æt. 60—completely bald. Pilocarpin subcutaneously for disease of the eye. After three injections, within a fortnight, the head became covered with a thick down which grew rapidly, so that in four months no trace of the baldness was left. No mention is made of the color. In the second case the patient, æt. 34, had a bald patch on top of the head the size of a playing card. Total restoration of the hair after two injections, in a short time.

Schöller² tells of similar results in animals in whom alopecia had been produced by injections of bacteria.

Oscar Simon³ relates the case of a woman æt. 30. General alopecia—head, eyebrows, eyelashes, axillæ and pudenda. In a few weeks after twenty injections of pilocarpin the lanugo of the whole body was restored. In other cases so treated there was no effect whatever.

Prof. Pick⁴ relates the case of a man who was afflicted with alopecia areolata. Two weeks after pilocarpin injections followed a fine colorless lanugo, and in twelve weeks restoration of the hair. Ten cases of alopecia pityrodes favorable results from same treatment. Color of hair not mentioned.

Landesberg,⁵ of Philadelphia, says that in more than 100 cases of eye disease treated by pilocarpin he observed no effect whatever upon the growth of the hair. Dose and mode of administration not mentioned.

In 1882 Julius Pohlman⁶ experimented on white rabbits by hypodermic injections of pilocarpin. The dose used was large, 1 grain three times a day. No change in color was noted in pure white rabbits. In particolored animals, white and brown, in one a brown spot on back of head deepened and spread to a remarkable degree down the back and sides of the animal to the legs. In other individuals no change was noticed. Post-mortems in these animals showed enlarged spleen and altered suprarenal capsules.

The question of change of color of the hair is an interesting one both from a physiological point of view and from the practical one of pathology. The physiological aspect embraces the question of how a change of color takes place—whether in existing hairs or produced by shedding of the hair and a new growth taking its place of a different color.

It has been doubted by good authority, Hebra and Kaposi, if the hair, after being once developed, can change except by a very gradual process. This doubt is based upon the theory that the hair has no vascular or nerve connection with the general system, and must therefore be independent of nervous or systemic influence. This position is, however, not tenable. The clinical evidence is positive that the hair does change color under systemic influences—sometimes gradually and sometimes suddenly. We hear frequently of the hair turning white in a night from violent emotions, as fright, great grief or great joy, and it has come to be a method of expressing extreme emotion to say "it was enough to turn one's hair white." I say it is not an uncommon thing to see mention of such cases in popular literature—but well authenticated cases are not so often found. It is recorded in history that the hair of Marie Antoinette and Mary Queen of Scots became white

² Klebs' Archiv., 1879.

³ Berliner Klinische Wochenschr., 1879.

⁴ Vierteljahrsschrift für Dermat. und Syphil., 1880.

⁵ Med. Bull., Phila., 1882.

⁶ Buffalo Med. and Surg. Jour., 1882, p. 441.

¹ Berliner Klinische Wochenschrift, No. 4, 1879; Med. Bull., Philadelphia, 1882.

suddenly from the horrors to which they were subjected. Poets have not failed to avail themselves of the idea. Byron in the "Prisoner of Chillon" says:

"My hair is gray, but not with years,
Nor grew it white
In a single night,
As men's have grown from sudden fears."

A short time since, in conversation with an eminent microscopist and pathologist, I asked how he would explain from the basis of minute anatomy the sudden change in color of the hair. He replied that he did not explain it; that he did not believe it happened; that the reported cases were not authenticated. He further said that from the structure of the hair and its relation to the skin, he considered it impossible.

Duhring, 3d Edition, is authority for the statement that Hebra and Kaposi discredit sudden canities. There is nevertheless no doubt of the fact that such change does sometimes occur, and to set the matter definitely at rest I looked up the subject in the Library of the Surgeon-General's Office. The following are some of the references found:

Dr. Wm. P. Dewees⁷ reports a case of puerperal convulsions under his care. From 10 A.M. to 4 P.M. 50 ozs. of blood were taken. Between the times of Dr. Dewees' visits, *not more than an hour*, the hair anterior to the coronal suture turned white. The next day it was less light, and in four or five days was nearly its natural color. He also mentions two cases of sudden blanching from fright.

Dr. Robert Fowler⁸ reports the case of a girl 16 years of age, apparently in good health, hair black; found one morning in combing her hair that a strip the whole length of the back hair was white, starting from a surface about 2 inches sq. around the occipital protuberance. Two weeks later she had patches of *Ephelis* over the whole body.

In the *Canada Jour. Med. Sci.*, 1882, p. 113, is reported a case of sudden canities due to business worry. Microscope showed a great many air vesicles both in the medullary substance and between the medullary and cortical substance.

Dr. Graves⁹ says most authors are of the opinion that the hair, once formed, is independent of the organism—with which opinion he disagrees, instancing *Plica Polonica* as opposed to such a theory. He gives the following cases:

1. British officer in India, 48 years old, fell into bad health and became prematurely gray. Returned to England, regained his health, and in four years his hair returned to its original brown.

2. In a man 67 years of age, hair white, chest covered with long white hair, chest was blistered, and when hair grew out over blistered surface, it was black.

3. Man æt. 35, bald. Small blister size of crown piece was applied to vertex for congestion of brain. Growth of hair followed over blistered surface.

4. Lady, hair of vertex gray and very scanty. Tar water applied. Hair grew and was of natural color.

5. Same occurred in another case after application of citrine ointment.

In the *Boston Med. and Surg. Jour.*, 1851, is reported a case of a man 30 years old; hair scared white in a day by a grizzly bear. Was sick in a mining camp, was left alone and fell asleep. On waking found a grizzly bear standing over him.

A second case: Man of 23 years was gambling in California. Placed his entire savings of \$1,100 on the turn of a card; was under tremendous nervous excitement while the cards were being dealt. He won. The next day his hair was perfectly white.

In the same article is the statement that the jet black hair of the Pacific Islanders does not turn gray gradually, but when it does turn it is sudden, usually the result of fright or sudden emotions.

The following cases are of change of color from white to black:

Dr. Bruley,¹⁰ physician to the Fontainebleu, reported to the Société Médicale, Paris, in 1798, the case of a woman 60 years old, hair naturally white and transparent as glass, became jet black four days before her death (phthisis). On examination after death the bulbs of the black hairs were of immense size and engorged with dark pigment. The roots of white hairs that remained were dried up and two-thirds smaller in size."

Dr. Alanson Abbe¹¹ mentions case of Dr. Capen, who had become gray, but on recovery from disease his hair became quite dark.

In the *St. Louis Med. and Surg. Jour.*, 1845, p. 310, there is reported the case of an old man 81 years of age, robust and hale. Hair from being perfectly white became black—same of the beard. This man also presented the phenomena of second sight; could read readily without glasses.

The text-books on skin diseases also mention cases. Several cases of sudden canities are referred to in Ziemssen.

Brown-Séquard in his own person noticed one day a white hair in his beard where there was none the day previous. He pulled it out and the next day others appeared. This was observed repeatedly, and there was no doubt the hair in its entire length turned white in one night. Under the microscope these white hairs showed small air bubbles in place of the normal pigment. In a case of hemiplegia, the hair became white on the paralyzed side. The same has been reported in cases of neuralgia. Other anomalous cases have been noted where the hair became white in patches, and where individual hairs have been seen al-

⁷ Phila. Med. Mus., 1807, Vol. iii, p. 219.

⁸ London Lancet, 1853, p. 556.

⁹ Dublin Quar. Jour. Med. Sci., 1847.

¹⁰ Boston Med. and Surg. Jour., 1852, p. 406.

¹¹ Wilson. Skin Dis. p. 377.

¹² Loc. cit.

ternately white and black at different stages of its growth—to which condition Karsh and Landois have given the name of “ringed hair,” and ascribed it to an intermittent trophic disease affecting the hair follicle.

Wilson¹³ mentions a case where the hair was gray in winter and regained its normal color in summer.

Alibert¹⁴ and Beizel relate cases of women with blonde hair which all came out after severe fever, and when new hair grew it was black. Alibert also relates the case of a young man who lost brown hair during illness, and that which replaced it was red. In the case of an epileptic girl of idiotic type with alternating phases of stupidity and excitement, during the stage of stupidity the hair was blonde; during excitement it was red. This change of color took place in two or three days—the change always beginning at the ends of the hairs. Pale hairs showed an increased number of air spaces. It has been frequently observed that when the hair changes color gradually the change begins in the end and extends toward the bulb. In conversation with an eminent ornithologist on the change of color in the plumage of birds he said: “I have lately been watching hairs in my moustache turn gray, and it always begins at the ends and extends to the roots.”

Speaking on the subject with a lady (the one who furnished the specimens here shown), she mentioned the case of the physician who attended her at the seashore last summer. The doctor's hair was long and quite gray. One day he came in to see her after having his hair cut and she was surprised to notice that the gray hair had given place to black. Examination showed that his hair towards the ends had been white and that nearer the skin black. The white portion had been removed by the cutting.

The cases here collected are only a few in comparison to what might be found; but they are sufficient to prove beyond all reasonable doubt that the hair does suddenly change color under certain circumstances, and that the change takes place in existing hairs.

Analogous to changes in the color of the hair in man are the changes which occur in the lower animals. In animals and birds such changes are often periodical, as in their summer and winter coats. This occurs to a very marked degree in a great many species. Thus the ermine in summer is dark brown, in winter is pure white. Among birds the ptarmigan is white in winter and brown in summer. So with our familiar bobolink, yellow in fall, in spring black and buff. As to the question whether, in birds and animals, this change takes place in individual feathers and hairs, or whether all the old plumage and fur is shed by moulting, recent investigations favor the

view that it is due to both. Dr. Elliott Cones¹⁵ says it may be either or both. Mr. Robt. Ridgeway (Smithsonian Institute) inclines to the opinion that in birds it is accomplished by moulting. Dr. Louis Stejneger (Smithsonian Institute) was formerly of same opinion, but recent studies have inclined him to the belief that there is also a change in the color of existing feathers. He was led to this change of belief by a critical study of the changes in color of the black and white flycatcher of Europe, and especially from an examination of a series of twenty-seven specimens of the narcissus flycatcher (*Xanthophygalia Narcissina*) of Japan. His studies in full will appear in the Proceedings of the U. S. National Museum, 1889. Dr. C. Hart Merriam, Ornithologist of the Agricultural Department, in a letter dated June 12, 1889, says: “The change from fall to spring plumage in birds is due to moult—without exception as far as I am aware. In the case of mammals the matter is now in dispute. Probably in the majority of cases it is due in part to moult and in part to actual change in the color of existing hairs. . . . The change in color from immaturity to maturity is always due to the growth of new hairs or feathers.”

That the change in birds and mammals is due in part at least to change of existing coats seems established. Sometimes this change is almost sudden, as where the change of season is very abrupt. In such case of course there would not be time for the growth of new hair or plumage.

In the golden plover (*Charadrius Dominicus*) the black belly of summer changes to white in winter. While this change is taking place individual feathers part black and part white may be seen. In Bonaparte's gull, a common gull of our coast (*Larus Philadelphia*) the black of the head of summer changes to white in winter principally by change in color of existing feathers.

Another interesting feature of this question as bearing on the change in the color of the hair by drugs, is the influence of certain substances administered as food, in changing the color of tissues in some of the lower orders. In orange canaries it has come to be an established fact that by feeding the parent birds with a certain kind of food the active ingredient of which is cayenne pepper, the offspring will be of an orange color, and orange-colored canaries may be seen in the stores of most bird fanciers. A food for producing orange canaries is extensively advertised by a bird dealer in Baltimore (Bishop). It is reported that the Indians of the Amazon cause green parrots to change to yellow and red by feeding them upon the fat of a certain fish allied to the shad.¹⁶ Dr. Merriam, in the letter previously quoted, says: “It is well known that food affects the color in birds. Red purple finches and pine grosbeaks invariably turn

¹³ Drocker. Dis. of Skin, 1888.

¹⁴ Loc. cit.

¹⁵ Fur Bearing Animals.

¹⁶ Wallace's Amazon.

yellow when caged. This is due undoubtedly to the absence of some important food element. In some of the Zoological Gardens of Europe it is the custom to send white spoonbills and flamingoes to Amsterdam Garden to be recolored. The particular food by which Mr. Westermann accomplishes this end is a secret—but it is believed to be a kind of shrimp or small crustacean which has a quantity of red pigment in its shell."

In the same direction are the changes of color in other tissues by particular foods. It has long been known that when pigs are fed on madder their bones become red. This fact has been taken advantage of by physiologists in studying the structure and development of bone. The phosphate of lime acts on the coloring matter of madder as a mordant. When given intermittently to a growing animal, the bone presents alternate rings of red and white.¹⁶

Darwin¹⁷ mentions that pigs in Virginia eat the paint root (*Lachnanthes Tinctoria*) and their bones are colored pink, and it caused the hoofs of all but the black varieties to drop off. "From facts collected by Heusinger it appears that white sheep and pigs are injured by certain plants, whilst dark-colored individuals escaped. . . . On asking some farmers in Virginia how it was that all their pigs were black he was informed that the black members of a litter were selected for raising, as they only had a chance of living."

Fleurens (1824) made use of madder for coloring the semicircular canals of pigeons, to outline the canals more distinctly. See also Ferrier on "Functions of the Brain," and the writings of Vulpin, the French physiologist. Mr. Lucas, osteologist of the National Museum, informs me that the bones of the crow are made purple by feeding on pokeberries. Ridgway says the bones of the Western fox squirrel are red while those of its Eastern brother are white. No cause has been assigned for the difference.

See also experiments by Marci Paolini in 1841. (Specimen quorundam experimentorum de vi Rubiae ad ossa ovorumque Gallinarum putamina calcariæ coloranda. No. 1 of Miscellanei Medici, Pamphlet Vol. 1149.) He gives a very good plate of the colored skeleton of a fowl, and also of its colored egg after four months feeding *Rubia Tinctorum*. He also gives references to other authorities, the most satisfactory of which is Belchior, Philosophical Transactions, Vol. 9, 1732-44, who gives an account of feeding hogs and fowls with madder root and wheat meal. A rooster so fed died in sixteen days, and showed the condition admirably. Other writers take up the subject after him in the same publication.

It is reported that among workers in cobalt and indigo the hair becomes blue. Also in artisans working with copper, the hair takes a greenish hue.

The color of butterflies can be changed according to the food upon which the caterpillars are fed. More remarkable still, perhaps, is the change of color in the chameleon, and in many insects, according to the color of the substance with which they are in contact.

The environment undoubtedly has a powerful influence upon the coloring of animals and birds. This is clearly illustrated in every museum of natural history. Specimens from arid desert regions are uniformly of a dull, faded appearance compared with those from regions of luxuriant foliage.

M. G. Pouchet,¹⁸ in his work "Mechanism of Change of Color in Fishes and Crustaceans," says that change of color in fishes is due to the size of contractile colored cells placed in the skin. These are under the influence of the nerves. The author found that the particular nerves controlling them (in the turbot) were nerves of the sympathetic system. By cutting the nerve supplying a particular area of the skin, he had been able to retain that area unchanged in color, while the rest changed as the fish found itself on a dark or light surface. That the eye is the means by which this change in its condition is communicated to the fish or crustacean, and that then reflex action takes place through the sympathetic nerves on the color cells of the chromatophors, is proved by the fact that when the animal experimented on is blinded, no further change of color occurs when it is removed from light to dark or the opposite.

Also see *Monthly Microscopical Journal*, 1871, Vol. vi, M. G. Pouchet on "Study of Connection of Nerves and Chromoblasts" (principally in fishes and batrachians).

The reasons assigned by naturalists for periodical change in color of plumage or fur are twofold:

1. Sexual selection.

2. As a protection against enemies.

1. Sexual selection. The male takes on a brighter and more attractive appearance to facilitate the business of courtship and the securing of a mate.

2. As a protection against enemies. In Arctic regions birds and mammals are usually white in winter, the color of the snow, so that they are with more difficulty found by their enemies. Darwin supposes that originally only a few individuals took on this change, and these being better protected, gradually, by a process of natural selection, only the white variety was left.

It is apparent from what has been said that there is very much concerning the changes of color of the hair and other appendages of the skin in man and the lower animals that is not understood. In its normal condition the color of the hair is dependent upon the hair bulb. It is

¹⁶ Todd's Cyclopedia of Anat. and Physiol., Vol. iii, p. 553.

¹⁷ Origin of Species, p. 9.

¹⁸ Trans. of Brit. Assoc. for Adv. of Science, 1872, p. 152.

here that the melanine is secreted from the coloring matter of the blood, and from this point as the hair grows it permeates its cells, the intensity and shades, from black to blonde, depending principally upon the amount of the coloring matter. In black hair the hair bulb is larger, contains a greater amount of melanine, and the hair itself is coarser and of more vigorous growth. In those cases where the hair has turned from white to black, and minute examination has been made, this has been found true.

In the case reported by Bruley, already referred to, of a woman æt. 60 whose hair, previously white, became jet black four days before her death, the bulbs of the black hairs are described as being of immense size and engorged with dark pigment, while the roots of the white hairs that remained were dried up and two-thirds smaller in size. So, on the other hand, in change from dark to white the hair is finer in texture, less vigorous in growth, and the hair bulbs smaller.

The sudden change in canities when due to violent emotions, can be explained in no other way than through the bulb. It is true that there is no direct vascular or nerve connection between the bulb and its hair after it emerges from the skin, but it is also undoubtedly true that there is communication by osmosis between the cells of the papilla and those of the shaft and different layers of the hair.

Wilson¹⁹ ascribes the cause of sudden whitening of hair to insufficient nutritive power of the skin; also suggests that there may generate a gaseous fluid in the hair in place of its normal constituents. He says further that the fluids from the blood-vessels of the skin permeate the hair, and thus change in fluids may alter color.

In all of the cases of sudden change to white, where the hair has been examined, the coloring matter has disappeared and in its place is found an accumulation of minute air globules. The same is true of gray hair of advancing age. How the air gets into the capillary structure has never been explained. Two possible explanations are offered. One is that in the destruction of the coloring matter a gaseous substance may be developed. The other is that air may find entrance from without, through the sides or end of the hair. It is possible to suppose a condition of the bulb producing a vacuum in the hair shaft that shall cause, by suction, a drawing in of air. The view that the air finds entrance through the end of the hair is supported in the fact that the change of color begins at the extremity.

Erector pili muscle has an important influence on pathological changes which take place in the hair bulb. This minute muscle has its origin in the true skin and, passing downwards, is inserted into the base of the hair bulb, so that when it contracts it lifts the hair outwards and com-

presses its papilla. The effect of sudden fright causes the hair to "stand on end" by contracting this muscle. Temperature has its influence with animals and birds. In cold weather (winter) the change is to white; in summer to black. Cold we know contracts the skin and thus probably causes pressure on the hair bulb. That the hair is easily influenced by external causes, as well as those which come through its bulb, is fully demonstrated. The mere fact that it can be so readily dyed and bleached artificially shows that the agents used for this purpose penetrate its substance. Bleaching agents such as chlorine, peroxide of hydrogen and strong alkalies act by removing the coloring matter, and not by adding any *whiteness* of their own.

It remains to say a few words upon the subject of changing the color of the hair by substances taken internally; and as this paper has already exceeded the limit I had set for it, I shall be brief.

1. In the human subject the only agent, as far as I am aware, which has been charged with changing the color of the hair, when taken internally, is jaborandi. Of this sufficient has already been said.

2. Cayenne pepper in changing the color of canary birds to orange.

This is a well known fact to bird fanciers. I tried in Washington to get a specimen to show you, but was told it was not the season for them—that they came in the autumn. Also that they soon relapsed to their original color unless the cayenne pepper food was kept up.

3. The change of color in parrots by the Indians of the Amazon, from green to yellow or red, by feeding the fat of a certain kind of fish (Wallace's Amazon).

4. The restoration of certain birds to their original brilliant colors at the Zoological Garden, Amsterdam, by feeding a kind of shrimp or small crustacean.

5. As analogous to the above, the effect of madder in staining the bones of pigs red, and of pokeberries coloring crows' bones purple.

It might be of interest, did time admit, to study the influence of diet and habit upon the color of hair in different nations of men; as for instance, why the Saxons have light hair and the Gauls black hair. It is within the bounds of possibility, also, that discoveries may be made in the future by which the color of the hair in the human race may be modified by judicious treatment of the parents.

Some colors of hair are not popular, especially with ladies, and it is not likely that cayenne pepper will ever become popular to produce the orange hue. But if its antithesis should be discovered and the orange changed to black or blonde, then perhaps the gentle maiden with auburn hair will disappear, and the white horse be left in melancholy solitude.

¹⁹ Lecture on Skin.

CLIMATIC CHARACTERISTICS OF SALT LAKE CITY.

Read in the Section of State Medicine, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY F. S. BASCOM, M.D.,
OF SALT LAKE CITY.

The members of this Association can easily recall a time when climatological researches were speculative, vague and unsatisfactory, and many of the articles presented on this subject were largely imaginative and conjectural; but within the last decade this subject has engaged the attention of some of the most eminent and scientific physicians, and so many valuable statistics have been collected from the United States Signal Service reports and other sources that climato-therapeutics has become an interesting and important study to every well-informed physician.

Local pride and enthusiasm have, however, induced many writers to advance claims as to the climatic advantages of health resorts which are not justified by actual statistics, nor by the experience of invalids; and though I cannot hope to present to the profession observations especially interesting or original, I do desire to avoid the errors above referred to. Again, there still remains a wide difference of opinion as to what is needed in a health resort. No less an authority than the late Dr. Austin Flint is accredited with having commended to consumptives the wards of Bellevue Hospital; while others, equally honest in their opinions, whose careful researches render them worthy of our consideration, have in turn recommended climates high and low, moist and dry, for apparently the same class of cases. It is hardly to be expected, therefore, that the subject matter of this paper will meet the approval of all; but if I can simply and truthfully present and favorably impress you with a few of the many advantages of Salt Lake City as a sanatory resort, my object will have been accomplished.

Salt Lake City is located near the shores of the Great Salt Lake, in one of the most beautiful valleys of the West. It numbers about 35,000 inhabitants, is laid out in blocks of 40 rods square, with streets 130 feet in width, many of which are adorned with trees and bordered with streams of water. The altitude of the city is 4,348 feet above sea-level. Surrounding the valley are lofty mountain ranges, and one never wearies of the variety of scenery which they afford, the beauty and grandeur of which can hardly be surpassed. The water supply for the city proper comes from the summit of the snow-capped mountains and is pure, clear and cold. Utah lake, 50 miles to the south, is the source of the Jordan river, a stream of fresh water flowing through the city to empty into the Great Salt Lake. This water, however, is only used for irrigating purposes, though the same lake would furnish an unlimited water supply, were it needed. Farms and orchards cover

the valley, and the cereals, fruits and vegetables are raised in abundance. This much as a brief general description of the city and environments, and I will now proceed to the special climatic advantages.

Most authorities believe that the essential features of a health resort, particularly for pulmonary diseases, should be:

1. Atmospheric dryness.
2. Equability of temperature.
3. Altitude varying from 3,000 to 8,000 feet.
4. Greatest number of clear, sunshiny days.
5. Freedom from high winds, electrified storms, etc.

I present them in the order of importance commonly adopted by writers on this subject.

ATMOSPHERIC DRYNESS.

The dryness of the atmosphere, as indicated inversely by its relative humidity, is, we believe, of more importance to the invalid than any other climatological factor. Dr. Denison, in an interesting essay on this subject, comparing Denver, Col., with Jacksonville, Fla., allowing for the increased volume of air breathed in the higher altitude, due to its rarefaction and consequent frequency of respiration, assuming in both places a robust man breathing eighteen times per minute and expiring an average of thirty cubic inches, ordinary exercise included, shows that in the dry air of Colorado the vapor exhaled above that inhaled in twenty-four hours is 2,453 grains, or nearly six ounces more than during the same period in Florida. The same method of comparison applied to Denver and Salt Lake City shows that in the still dryer air of Salt Lake the excess of vapor transpired would be 144 grains more than in Denver and four ounces more than in Los Angeles. Certainly his suggestion, that "this transpiration of surplus vapor is an admirable vehicle for removing effete matter, waste tissue and germs of disease," is a most reasonable one.

Though opinions vary on almost every other climatic factor, all agree that *pure* air is essential to the invalid, and that the dryer the air, the more aseptic are its properties. This much is conceded by those who oppose altitude, equability, etc., as of importance in climato-therapy. In this connection I would submit the following table, compiled by Dr. H. D. Niles, of this city, from the United States Signal Service reports:

Period of observations, from 1879 to 1884, inclusive.	Elevat'n Feet.	Relative humidity Per cent.	Average daily Range. Deg. F.	No. clear and fair days.
Salt Lake City	4,348	44.0	18.6	277
Denver	5,294	51.2	24.2	309
Colorado Springs	6,080	55.5	28.4	316
El Paso	3,764	48.9	30.1	332
Santa Fe	6,992	44.7	26.0	318
Los Angeles	371	68.2	23.1	313

It will be noticed that the relative humidity of Salt Lake City during that period is 44 per cent.

of saturation, while that of Denver, a representative high altitude resort, is 51.2, and that of Los Angeles, of low altitude, 68.2, a difference in the first instance, in favor of Salt Lake City, of 7 per cent., while in the latter comparison there is a very great variation of 24 per cent.

Statistics for given periods are apt to be misleading, and in combining the various conditions essential to rating a climate, figures favorable or unfavorable may be chosen, according to the period selected; but, endeavoring to make due allowance for any discrepancies in this regard, I think I am correct in drawing the conclusion that for dryness of atmosphere Salt Lake City is not excelled.

EQUABILITY OF TEMPERATURE.

But few authorities are inclined to criticise an equable climate, and this is one of the strong points in favor of Salt Lake. The close proximity of Great Salt Lake, a body of water covering an area of 2,500 square miles, acting as a moderator to the climate and tempering the winds, gives to this city an equability of climate usually found only in low altitudes with excessive moisture. In this feature the climate is indeed unique, and nowhere else, to my knowledge, can the same degree of equability be found combined with perfect hygrometric conditions and such elevation. High altitudes and dry climates usually have their disadvantages in extreme cold, high winds and variability, while to secure equability we must submit to warmth, moisture and accompanying enervation; but in this valley there seems to be a happy exception to the general rule, for, as above indicated, the average daily range is but 18° F. Drs. Hamilton and Standart, well-known Salt Lake physicians, stated, in a recent paper, that from a record of the readings of the thermometer kept at Camp Douglas, three miles from this city, for a period of twenty-four years, previous to the establishment of a signal service station, it was ascertained that the average high extreme for these years was 97½°, and the average low extreme 4° above zero, making an average annual range of 93½°. It will be seen that for equability of climate these figures compare favorably with sanitary resorts of low altitude, while, as compared with cities of the same altitude and relative humidity, there is a marked difference.

ALTITUDE.

Another great advantage is that the elevation is not extreme. With an altitude of 4,300 feet, it also has advantages of varying the elevation from 500 to 1,500 feet, for patients may choose their residence either on the benches and foothills of the mountains, or in the valley below, and still be at no great distance from the center of the city. The invigorating and tonic effect of the rarefied air of this altitude, as compared with the heavy, depressing atmosphere of the sea coast,

can hardly be estimated, and certainly none can appreciate it who have never sojourned in a mountainous region. It will also be observed that with a moderate elevation we have nearly all the advantages and none of the dangers of high altitude resorts.

NUMBER OF CLEAR AND SUNSHINY DAYS.

Statistics are not so favorable in this respect, perhaps, as in some other cities, and yet it must not be understood that the percentage of cloudy days necessarily indicates that the greater part of the day is cloudy. On the contrary, it is seldom that the sun is obscured longer than a few hours in the day; a fog is unknown, and refreshing rains are hailed with delight. The invalid is soon in the sunshine again, relieved from the dust. A day during which the face of the sun does not smile upon this valley is exceptional indeed, and an event to be remembered. The average rainfall for Salt Lake City from 1847 to 1889 was between 15 and 16 inches, the maximum for any single year during that period being 22.61 inches, the minimum 10.14 inches. Weather reports for a number of years place the mean rainfall at Denver at 14.99 inches, and at Los Angeles, 18.25 inches. A striking advantage in the rainfall of this valley, as compared with Los Angeles, is that while Los Angeles has its rain almost entirely in winter, with but little during the balance of the year, and, consequently, intolerable dust, in Salt Lake City the showers occur during the summer, purifying the atmosphere. *Freedom from high winds*, as already indicated by its equability, is another advantage this climate enjoys. Observations show that the number of miles traveled by the wind at this point for one year was 44,468; some years were as low as 37,000. To more clearly indicate this favorable feature I would state that for the same year statistics show that the number of miles traveled at San Diego was 55,062; Colorado Springs, 70,912; St. Paul, 76,096; Jacksonville, Fla., 74,192, and Cape May, 134,455. This not only relieves from extreme cold, variability, great amount of dust, etc., but what is equally essential, it allows the invalid the freedom of constant open-air exercise, without the dangers of being frozen by a blizzard or translated by a whirlwind, such as are frequent in other high and dry climates. Though this valley may have its dust storms, the moderate velocity of the wind renders this disturbing element less frequent here than usual to corresponding altitudes. But perhaps enough has been said in detail of the climate of this valley, and in what follows I feel that I am justified in assuming that Salt Lake City has the climatic advantages so important to health seekers. Pure and desirable atmosphere is, however, not all-important. Neither is it the only advantage Salt Lake offers. A high and dry climate,

in itself essential, can be greatly aided by healthful surroundings, and if you can add to such a climate many of the beneficial features of a seaside resort, you give to the invalid an "ideal climate" indeed. Such, we believe, is that of Salt Lake City. So large a body of water as the Great Salt Lake lends its modifying influence to the atmosphere of the city, and residents in this valley are invigorated by bathing in its waters, unique and wonderful in their effects. This lake is about 350 miles in circumference, and picturesquely located. Analyses of the water vary in its solid ingredients from 15 to 30 per cent., according to different periods of examination. This may be accounted for by increased fresh water supply at one time, and diminished supply, rapid evaporation, etc., at another. The water is so clear that objects at a depth of 15 feet can be distinctly seen. The temperature of the water during the bathing season (from May 15th to October 15th) varies from 65° to 85° F. The novice need have no fear of going to the bottom, for the density of the water (about 1,800 grains of solid matter to the pint) renders sinking impossible and swimming a delightful exercise; while invalids too weak to indulge in this recreation can spend their time upon the beach, enjoying the sunshine and the beautiful scenery, strengthened by the refreshing breezes of the lake. Eastern cities are filled with men and women enervated by overwork and mental strain, who would be given a new lease of life by one season at the Great Salt Lake, and many consumptives have already attested its virtues and sounded its praises.

We hear of the hot springs of Arkansas and their favorable effects on the many invalids who visit them, but within the limits of this city are several hot sulphur springs of equal virtues, where one can derive all the benefits of the waters without endangering health by the depressing influences of the Arkansas climate. Numerous cases of rheumatic and neuralgic affections, gastro-hepatic, skin and syphilitic diseases, and miners suffering from metallic poisoning, resort to these springs and are benefited by their use, and at an early date it is expected that a sanitarium will be erected in the heart of the city, with all the conveniences for invalids, with baths supplied by piping water both from these springs and Salt Lake, so that all can, with little exertion or expense, derive the full benefit of the springs without inconvenience or loss of time. But the more practical may ask, what class of cases are most benefited by this climate?

I have in my possession a long list of clinical notes on cases of phthisis, etc., which have been cured by this combination of nature's remedies. Some of these histories are of unusual interest from their long and faithful but unavailing trial of other resorts; others because they are the only

survivors of large families which have succumbed to the disease. If any present are interested, I shall be glad to furnish them; but it is not my intention to embody, in an article of this character, elaborate clinical statistics, nor to attempt to classify the diseases which are benefited by a residence in Salt Lake City. I have already, in referring to the lake and springs, indicated some of these diseases, and I might add to such as have been suggested the whole list of so-called strumous affections, while others will suggest themselves to every experienced physician.

Any person taking the trouble to investigate will find that phthisical patients have been and are now being positively and permanently cured by long residence in this climate. I would emphasize the expression "long residence," for many can tell the sad story of some bright young consumptive who has been so greatly improved by a short residence of from three to six months in this climate that the cautions of his friends and physicians are disregarded and he returns to his Eastern home only to find, after a brief interval, that the dread disease is again upon him, and though he may again hasten to the mountains, he finds that it is too late. It is well known that high altitude and rarefied atmosphere accelerate the circulation and hasten tissue change, and the general inference has been that heart disease and advanced cases of lung troubles should be prohibited these climates. Assuming that this inference was correct, I have watched my cases of organic heart disease with much anxiety, and have frequently urged lower altitude. To my surprise, however, some of the most aggravated forms of valvular heart disease are improved rather than depressed by this climate, and among these are patients who have had all the advantages of low altitude resorts and are capable of judging of the relative benefit derived by residence in various altitudes.

In this connection it may be well to again call attention to the moderate altitude of this city and the opportunities for varying the elevation as may be most suitable to the individual case. I offer this suggestion for what it is worth. I do not assume the responsibility of recommending this climate for all cases of heart disease, but it is probable that many cases which do not do well in other climates will progress favorably here.

Again it is presumed that advanced stages of phthisis are not benefited by high altitudes, but the end only hastened. Certainly this is true of extreme and hopeless cases, and yet we are not without many authentic histories of relief and cure in this climate where abscess and well-marked destruction of lung tissue had been diagnosed by our most eminent Eastern physicians, and it is nothing unusual to meet now comparatively healthy and active business men who were brought here on a stretcher. It is, however, im-

portant to impress upon all physicians recommending patients to this climate the desirability of sending them early in the incipency of the disease, if the best results are to be expected. In recent years the many allurements of the Golden State have attracted so many health seekers, and the travel in that direction has been so great that, as when in olden time "all roads led to Rome," so now California is in all instances the objective point. As these people journey homeward disappointed, as a great many are, by the climate of the western coast, we are convinced that they may find in the Great Salt Lake Valley all the climatological factors so essential to the comfort and restoration of the invalid.

DR. H. B. BAKER criticised the author in that he had given only the *relative* and not the absolute humidity, and had not supported his claims with tables of sickness and death.

REPORT OF CASES OF DANGEROUS MIDDLE EAR AND MASTOID INFLAMMATIONS WHICH FOLLOWED TREATMENT OF THE NASO-PHARYNX.

Read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, held at Newport, June, 1889.

BY J. L. THOMPSON, M.D.,
OF INDIANAPOLIS, IND.

Seventeen or more years ago, when the nasal douche was in the hands of nearly every one under treatment for catarrh, inflammations of the middle ear from the unskilled use of said douche were frequently met with. Now again, since such great advancement has been made in the line of nasal surgery, we see these inflammations quite often. Many of them have fallen under my care of late, some of which are briefly reported as follows:

Case 1.—Suppurative otitis media, with total loss of the left memb. tymp., from the use of finely powdered acetate of lead in epistaxis.

This occurred in a young man aged twenty-three years, eight months before he consulted me. He stated that everything had failed to arrest the bleeding until his physician applied the lead, which had the desired effect very quickly, but that it started a violent pain in a few hours, which finally caused perforation and destruction of the drum-head and a discharge ever since, and terribly impaired hearing, which condition still existed at the date of my examination.

Case 2.—Otitis media, with extension to mastoid process, following the application of a strong solution of nitrate of silver to the nares. Wild's incision. Apparent recovery. Death.

This happened in a young man aged eighteen,

who had been under treatment by his physician for catarrh for some time. Like the former case, after the use of the silver the ear soon became violently inflamed, was treated, became better and worse, and was finally sent to me for treatment. I found the tissues swollen behind the ear, and immediately cut down to the bone and evacuated a large quantity of pus. He soon became much better and returned home in one week, but took a relapse in a short time and died of meningitis, as I subsequently learned. No post-mortem examination.

Case 3.—Otitis media, following the application of caustics to the nasal mucus membrane. Puncture of the drum-head; recovery.

This was in a man sixty years old who was under the care of an eminent specialist of an adjoining state. He suffered very much for weeks but recovered his hearing.

Case 4.—Suppurative otitis media of five years duration, following local applications to the nares. Loss of left drum-head, polypoid growths, caries, death.

A young lady, aged twenty, who had been in the hands of an excellent surgeon in another city. He had first treated her nose, then her ear, had removed a polypus, but still there was an offensive discharge, for which she consulted me. I saw a polypus in the middle ear, but as she could not then remain for treatment, gave her a weak solution of bichloride of mercury ($\frac{1}{4}$ grain to the ounce,) to use once or twice a day until she could return for treatment. She came back in three months, when no sign of a polypus was seen. (This is by no means unusual after the use of bichloride of mercury.)

The dry boracic acid treatment was begun, but it had no effect in stopping the discharge; other applications were made with like results. Carious bone was felt with the probe, which we intended to remove, but as she was called home suddenly owing to the death of an intimate friend, a simple antiseptic wash was given her until she could return, but she died in a very few days from what her physician pronounced to be meningitis.

Case 5.—Suppurative otitis media, with total loss of the right drum-head, with greatly impaired hearing following the surgical treatment of the naso-pharynx.

This was a very painful and protracted case from an adjoining State, which had also been in very skilled hands. He had had some nasal hypertrophies removed when a violent inflammation of the ear was set up, was treated for it for some time by the operator, and subsequently by one who made a specialty of the ear, but having a slight cessation of pain he visited relatives in Indianapolis and called on me. I found great tenderness all around the ear, though there was profuse suppuration. He was twice leeches very

freely, when he became much better; tenderness came up again over the mastoid process, but leeches and anodynes to said process and to the external auditory meatus again relieved him. Still much suppuration continued, and I lost sight of him as he had to leave the city.

Case 6.—Inflammation of middle ear in a man aged forty-five, following the removal of nasal hypertrophies by caustics. Treatment: leeches, hot fomentations, atropia, to external auditory meatus. Recovery in four weeks.

Case 7.—Severe otitis media on both sides in a child twelve years old, following excision of the tonsils. Recovery in three weeks after the free use of leeches and atropine solution.

Case 8.—Suppurative otitis media, with perforation of the left memb. tym., in a young lady aged twenty-two, following the use of caustics to mucous membrane of the nose. Violent pain. Treatment: leeches, atropia, hot fomentations; partial recovery, relapse; hearing finally restored to $\frac{1}{2}$.

This lady declares that she had never been troubled with her ears before the treatment of her nose and throat had been begun; but on questioning her very closely she admitted that she had noticed a ringing and buzzing in one ear for a year or more before she consulted a throat specialist.

Case 9.—Suppurative otitis media, both sides, of very long standing, with extension of inflammation to mastoid antrum, from local applications to nares. Trephining the bone, followed by perfect recovery and restoration of hearing.

This was a young man aged twenty, who was brought by his physician to see if anything could be done to prevent the frequent relapses of acute inflammation and stop the discharge. On May 10, 1887, one could not touch the tragus nor draw the pinna backward without causing intense pain. The ex. aud. meatus was still very much swollen. Leeches were applied and hot solution of atropia was dropped into the meatus, after thorough gentle cleansing, and he got relief. He was brought from time to time to my office until July 10, 1887, when he complained of dizziness and vomiting occasionally. Much tenderness and redness was found at the back of the ear, and the auricle stood out a little too prominently, but the discharge of pus from the meatus was still copious. An incision was made down to the bone, which was perforated to the antrum with a large drill, when pus followed to the extent of half a tablespoonful. He immediately returned home, and his physician informed me that the discharge ceased and improvement took place immediately. He went to his work in two weeks, and when he came to pay me on September 26, 1887, the drum head was healed. His acuity of hearing $\frac{1}{2}$, and he declared his hearing was as good as ever.

Case 10.—Suppurative otitis media, with per-

foration of both membranes, in a man aged 25, following the use of a caustic to nasal hypertrophic tissue. Very severe pain, long continued. Treatment, leeching. Hearing finally restored.

Case 11.—Was very similar to the above, from the same cause, in a man aged 45; but in this one permanent destruction of both drum heads followed, with greatly reduced hearing distance. He was treated by a physician related to him by marriage, which of course made it rather unpleasant for both parties concerned.

Case 12.—Suppurative otitis media, left side, with perforation of drum head, in a lady 23 years of age, following the use of caustics to nose. Long continued inflammation and suppuration, with final recovery of hearing.

Case 13.—Suppurative otitis media in a young lady 22 years old, during the treatment of "nasal catarrh." Perforation of drum heads, long continued suppuration, recovery left, extension to mastoid right, symptoms alarming; trephining of bone, rapid recovery, with complete restoration of hearing. She was brought by her physician on the 1st of April, 1888, with a profuse discharge from both ears which had defied all his efforts to control, and which seemed to promise nothing better in my hands for a while; but ultimately the left ear recovered. Late in May she had vertigo, constant vomiting for twenty-four hours, with intense headache. She was placed under an anæsthetic, the left mastoid process cut down upon and perforated by a large drill, which passed into the cavity with a jolt. Much pus followed. A drainage tube was inserted, and it was, of course, dressed antiseptically. The discharge immediately ceased from the ear. In one month she was well, and her hearing is now as good as before any throat or nose treatment had been entered upon.

Case 14.—This was an ordinary case of otitis media, with destruction of the drum head and subsequent suppuration, in a young married woman, following the local use of medicines to the nose for hypertrophic catarrh. Sickness of one of the members of her family took her from me, and I have not been able to hear the result.

Case 15.—Was very similar to the above, from the same cause, in a lady aged 24. After long treatment the discharge ceased and her hearing was almost as good as before.

Case 16.—Ulcerative otitis media in a man aged 38, with perforation of both memb. tym., following the removal of nasal hypertrophic tissue. Treatment of no avail, hearing very much impaired. I simply saw him a few times after his hearing had been affected; first about three months afterwards, when he was bewailing his sad condition. He said nothing ailed his ears until his nose was treated. He could not then hear a watch unless pressed against each ear. Nothing that I could do benefited him. Again,

in six weeks, he came, but was no better. He was a very quiet, nice German; was so terribly depressed about his hearing that I should not be at all surprised to hear of his committing suicide.

Case 17.—Suppurative otitis media in a man aged 44; local applications for severe nasal inflammation. He recovered under leeching and atropia. Hearing as good as before nasal treatment.

Cases 18 and 19.—Were both cases of suppurative otitis media. In each did perforation of one memb. tymp. take place; both occurred during treatment of the nose. One recovered after three weeks of treatment; the other still has a discharge from the middle ear, with hearing very much impaired.

Case 20.—Differs from all the preceding ones. A delicate-looking woman, aged 33, was brought to me by a throat and nose specialist on account of her terrible complaints concerning her ears. He had removed some hypertrophic tissue from the nose, when she set up a terrible outcry about pain in the ears. I found that some inspissated cerumen prevented a view of the lower part of the ext. aud. meatus on one side. I gently removed this with a syringe, when the woman declared that I almost killed her, and she had to lie down. I gave her a solution of cocaine and atropia to put into the ear, and requested them to call the next day; but just as daylight began to dawn on the following day her husband awakened me, declaring that she was almost frantic with pain in the other ear. He had given her several one-sixth grain doses of morphia, which only partially relieved her. I ordered him to discontinue the use of morphia internally, supposing that she was addicted to its use, which he declared was not the case; that, on the contrary, she was religiously opposed to it. I gave him a simple solution of morphia to drop into the ear hot, apply hot fomentations, etc.; but he was soon back, declaring that his wife was tearing her hair with pain; that pains darted to her uterus, which hurt her just as badly as did the ear, and that it was all the result of the strong treatment which the throat specialist had used. I informed him that I could not continue the case, as it required that a physician visit her, which I could not do. Judge of my surprise when I found her walking into my office in one hour subsequently, feeling much better. On examining the ears I found every evidence in each of an old perforation of the drum head. I have not seen the case since, but have learned from the physician who first brought her that she is a hysterical morphine eater who came very near rendering his life a burden until he expressed his mind to her in as forcible language as the dignity of our profession justifies in such cases.

REMARKS.

While engaged in writing up these cases many

similar ones have come under my treatment; indeed, not a week passes that I do not meet with at least one acutely inflamed middle ear, alleged to have been caused by applications of medicines to or operations upon the mucous membrane of the nose or pharynx.

This convinces me that such inflammations from said causes are of very frequent occurrence. Whether or not it is by direct continuity of tissue, or reflex, as claimed by Dr. Woaks, I shall leave to the judgment of my audience, my object being simply to record what I have seen, with a few suggestions as to the course to be pursued in anticipation, prevention and treatment of these exceedingly unpleasant and annoying complications.

Seeing, then, that such cases must be met with occasionally, it behooves every nose and throat specialist to make diligent inquiry of every patient by whom he is consulted as to the condition of his ears. He should not take the statement, "Oh, my ears are all right," but should test them with watch or acumeter and tuning fork; should ascertain the true condition of the drum head as to brightness or dullness, mobility, etc.; should particularly inquire about tinnitus, "stuffed feeling" in ears, etc.; and, above all, should not only keep in mind the fact that few ears remain perfectly normal when nose or throat disease is present, but should also so inform his patient. If this was done more often, the result would be better to the feelings of both patient and medical adviser.

Second.—Operations should never be made upon nor caustics applied to nose or pharynx during acute catarrhal inflammation of the parts.

Third.—Patients should be requested to report to us immediately on the first twinge of pain in the ear after these applications or operations have been made, so that we may combat them at the very inception.

Fourth.—The operator should be prepared to leech such cases early, as time is of the greatest importance. Many of these inflammations could be stopped almost immediately by this alone. He should also be ready to puncture the drum head before it is done by inflammatory action, and he should by no means delay the operation of perforating the mastoid process when extension to it has taken place; for, like the operation of tracheotomy, it is much more often delayed too long than made too early; and we must not forget that opening the bone often immediately relieves the patient of an exceedingly unpleasant and annoying discharge from the external auditory meatus.

It is well also to bear in mind that in the performance of this operation careful surgeons have done just as much with trephine and drill as have others with chisel and mallet, to say nothing of the elegance of the procedure or of the malposi-

tion of the transverse sinus, which could not be injured by skilful manipulators, no matter what instruments were handled.

DR. HOLBROOK CURTIS said that he objected to accepting the statistics as set forth in the paper, from the fact that Dr. Thompson did not state in what manner the caustics so frequently spoken of were employed, nor by whom employed; certainly by no rhinologist who was competent. He thought it was a serious reflection upon methods which are now in vogue and generally recognized as conservative and beneficial, and from which a long line of patients who are now suffering from chronic otitis media and tinnitus are destined to receive relief. The great future of rhinology lies in this especial direction, and to one who has had an experience of several thousand cases in which erectile tumefactions have been treated with chromic acid, and in but one case an acute otitis media observed, it comes upon one as a thunderclap to hear so many cases tabulated as being the result of rhinological work. Every rhinologist sees cases which have been maltreated by the use of caustics in incompetent hands, and the inference one must draw is that in certain localities there must exist a very ignorant class of rhinologists.

DR. E. FLETCHER INGALS, like the gentleman who had just spoken, thought middle ear disease extremely rare as the result of treatment of the nares by competent rhinologists. He could only remember one case, which came on ten days after a severe operation on the septum, and he doubted whether there was any connection between the two. However, he thought the paper well timed and exceedingly valuable.

DR. WOOLEN: I arise to say, first, I am one of those doctors who lounge around Indianapolis, and recognize in the paper two or three of my cases, especially the last; second, my experience teaches me, as does the paper of Dr. Richardson, that many of these cases follow very slight causes and not after formidable operation and cauterization. I have never had them follow a formidable operation, but, as in my last, a small cauterization of anterior tips of inferior turbinated, and fourteen days after, following an exposure in a mine; and, third, that I never cauterize the posterior region of the nose, as suggested by some of the speakers. This is the region for the snare, and should never be subjected to the cauterization, as suggested.

WE regret to learn that Dr. Thomas Opie, Dean of the College of Physicians and Surgeons at Baltimore, and one of the most noted surgeons in the South, is lying dangerously ill from blood poisoning at his home in that city.

DISEASES OF THE ANTRUM.

Read in the Section of Oral and Dental Surgery, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY WILLIAM CARR, M.D.,
OF NEW YORK CITY.

In the preparation of this paper, it was not deemed necessary to describe the anatomy of the maxillary sinus or to mention all its pathological conditions, as the principal end in view was to present in a practical manner a few observations on that form of antral disease that is of especial interest to us as oral surgeons, namely, suppuration. Different authors vary in opinion regarding the causes leading to suppuration. The throat specialist and the dentist view this disease from the standpoint with which each is most familiar, and it is difficult to form an accurate estimate of the specific causes that produce the greatest number of cases. Zuckerkandl, in his treatise on "The Normal and Pathological Anatomy of the Air Passages," claims that a majority of the cases of suppuration of the maxillary sinus directly result from "the extension of the inflammatory process of the nasal mucous membrane, produced by continuity of tissue." That is to say, that rhinitis, either chronic or acute, may cause an inflammatory condition of the sinus and consequent suppuration. Zuckerkandl further says: "My experience with the inflammatory diseases of the lining of the maxillary sinus is, that they mostly follow pathological processes of the nasal mucous membrane, and accordingly the soft parts of the nasal and maxillary cavities are generally diseased together." This view is coincided with by a number of authors. From the advance sheets of Dr. Bosworth's new work on diseases of the nose and throat, I notice that he holds different views. He maintains that few, if any, cases can be traced directly to this cause, claiming that inflammation of the mucous membrane shows but slight tendency to extend from one anatomical region to another. This is doubtless true—we have all observed that an inflammatory condition of the mucous membrane of the oral cavity, although severe, seldom extends to other anatomical regions. As an argument to sustain his theory, Dr. Bosworth states that "but few persons suffer from antral disease compared with the great numbers who are affected with chronic rhinitis." At the same time, he admits that, in many cases, hypertrophic rhinitis produces antral disease—not by extension, but, because this hypertrophic process, in some manner, causes occlusion of the ostium maxillare.

Watson, of London, on "Diseases of the Nose," expresses the opinion that nasal polypi are the most frequent causes of suppuration of the maxillary sinus, from the fact that, in nearly every case, they originate near the ostium maxillare, and, as they develop, they produce an occlusion of the orifice.

Boerhave's researches show that "in its normal condition, the antrum contains a bland, inodorous, gelatinous, colorless fluid;" that this secretion keeps the walls moist, but does not accumulate in the sinus, it being partly absorbed, and, possibly, partly evaporated by the passing air current.

But, should causes operate to close the orifice of the sinus, the external air could not penetrate into it, nor could the air already in the cavity escape from it. In this case, the vascular system would act as a medium for the gradual absorption of the confined air, which would, necessarily, be replaced in the sinus by the secretion. But, as this secretion could not be absorbed as rapidly as exuded, the air yet remaining in the cavity of the sinus would decompose the accumulated mucus, thereby causing irritation and disease of the mucous membrane.

Thus, by closure of the ostium maxillare, it is possible, for the antrum to become diseased, and with its increased secretion, to produce ectasis of the sinus.

From this we can readily understand how nasal polipi and chronic rhinitis may, in many cases, produce antral disease. While I admit that antral diseases are produced by these causes, yet I am convinced, from the number of cases that have been under my immediate observation, that fully 80 per cent. of the cases of suppuration of the antrum are caused either directly or indirectly by diseased teeth. When we consider the anatomical relation of the teeth to the antrum, that they are separated only by a thin layer of bone, and, frequently, the roots of the teeth form protuberances in the floor of the antrum, or actually penetrate into it, when we consider the vascularity of the alveolar process, and the frequent pathological changes of the teeth and their alveoli—these changes being pericementitis, alveolar abscess, alveolar periostitis and necrosis, we can easily comprehend why diseased teeth cause such a large percentage of antral disease.

The symptoms of antral suppuration vary with the exciting cause. When the ostium maxillare is closed either by hypertrophy, nasal polypi or inspissated mucus, the first symptom may be only slight febrile disturbance; but the disease is often ushered in with intermittent fever and rigors accompanied by violent pains, a sense of weight and pressure in the sinus, with distension of its walls, soreness of the teeth and cedema of the cheek. If the suppuration is due to defective teeth, the above symptoms are usually absent, excepting the copious discharge from the nostrils. The natural orifice into the meatus is usually found unobstructed, and the mucous membrane of the facial surface greatly congested as in severe cases of pericementitis. After diagnosis has been established, the treatment of antral suppuration is simple in its character. If caused by

obstruction of the ostium maxillare, the obstruction should immediately be removed, and an effort made to effect a cure through the nares. Should this be unsuccessful, the question arises: Where shall an opening be made for evacuating the sinus of the accumulated secretions, and for subsequent treatment? Various operations have been suggested for this purpose. Owing to a natural hesitancy to remove sound teeth, it has been suggested that an opening be made in the meatus below the inferior turbinate bone. I believe this operation is unjustifiable. While the opening may be made without difficulty, it would be repugnant to the patient, the operation seeming to the patient to be more formidable than it really is. Neither would it afford the same facilities for thorough cleansing as would an opening through the alveolus. I should never hesitate to make an opening through the alveolus even at the sacrifice of a sound tooth, and, in such a case, should be governed in my choice of extraction by the character of the tooth, always selecting the weakest. By preference, I should extract the second molar, as this makes an opening nearer the centre of the floor of the antrum; but if either the first or the third molar, or the second bicuspid is defective, I should remove it. Should it seem best to extract the second bicuspid, I should drill upward and slightly backward, as, at this point, the floor of the antrum is thicker than at the other points mentioned. In case the teeth on the affected side are all missing, I should select the point corresponding to the second molar. If the trouble arises from decayed teeth and necrosis is present, all necrosed bone should be removed. Before commencing either to remove necrosis or to make an opening into the antrum, a 10 per cent. solution of cocaine should be applied to the gums three or four times in order to produce local anaesthesia of the mucous membrane. The operation is then performed with but slight inconvenience or pain to the patient. The opening being established, the antrum should be thoroughly cleansed with tepid distilled water, to which a little salt has been added, until all traces of pus have disappeared. If the discharge is offensive, the cavity should be syringed with permanganate of potash, and dressed with a stimulating solution composed of carbolic acid 1 drachm, glycerine 1 ounce, and distilled water 7 ounces. Or, if preferred, Dobell's solution or Listerine may be applied. The cavity should be cleansed twice daily with salt water, followed by either of these stimulating solutions until the discharge diminishes, when this treatment once daily will be sufficient. Should the orifice in the meatus be closed by inspissated mucus, the patient should be instructed to use either of the above stimulants several times daily, by means of a nasal spray, until the obstruction is removed.

Some practitioners insert a silver drainage tube

through the orifice, which is kept in place by ligatures. I see no advantage to be derived from this practice, as thorough cleansing twice daily is all that is required. Besides, there is always the possibility of food being pressed through the tube into the sinus, or of becoming clogged at the entrance, so that the end sought is not attained. I prefer the method suggested by Dr. Abbott, of closing the opening by means of a broom straw, serrated and wrapped with carbolized cotton, then pressed firmly into place, and retained by ligatures to the teeth. If there are no contiguous teeth, a plate may be inserted with a projection one-half the size of the orifice, and this projection wrapped with carbolized cotton to fill the remaining space. This is sufficient to exclude all foreign substances. After the discharge ceases, the cotton should be diminished in quantity daily, thus permitting the orifice to close gradually. This is the only treatment that I have used, and it has been uniformly successful. The following is a brief history of a few typical cases that I have treated :

Case 1.—Mr. M., æt. 33, who stated that, until within two years, he had been in perfect health. He then noticed an offensive discharge from the right nostril which usually disturbed him greatly upon retiring, causing violent coughing when lying upon the left side. Also, upon arising in the morning, he experienced nausea, which continued until the nasal cavity had been entirely cleared. He supposed that he was suffering from catarrh, for which he sought and received treatment, at intervals, for twenty-two months, when the following additional symptoms were manifested : At intervals of three or four days, he experienced attacks of vertigo, followed by severe otalgia, and great tenderness of the teeth. For these symptoms, he was treated by his family physician for three months, who finally advised him to consult me regarding what he supposed to be an alveolar abscess. The right side of his face was then greatly swollen. Upon examination, the full number of teeth were found, but the second bicuspid had been filled, and was pulpless. My diagnosis was not that of simple alveolar abscess, but of suppuration of the antrum. The extraction of the second bicuspid was followed by a slight flow of pus. A further examination showed the alveolar process greatly necrosed, but there was no visible opening into the antrum. After an application of cocaine all necrosis was removed and an opening made into the antrum, when a great quantity of offensive matter escaped. The lining membrane of the antrum had thickened to at least ten times its normal thickness ; this pathological condition I have found in all chronic cases upon which I have operated. Upon proceeding to syringe the sinus, I failed to establish an outlet through the opening into the nares. The sinus was first

cleansed with salt water, then with permanganate of potash, after which the orifice was closed in the manner already described. The patient was then directed to use Dobell's solution by means of a nasal spray, in order to remove any secretion from the nares. The following day, the pledget of straw and cotton was removed, when the discharge seemed greater than on the previous day. The opening through the meatus had by this time been established, and the cavity was thoroughly syringed with hot water until all traces of pus had disappeared. Then it was cleansed with a stimulating solution and the pledget removed. This treatment was continued daily for three months, when the case was cured and the patient dismissed. I have seen him since, at intervals, during the past three years, and there are no signs of recurrence of the disease.

Case 2.—Miss J., æt. 30, had considerable discharge from the right nostril, and had been treated for catarrh. The right side of her face was greatly swollen. Upon the affected side were found the second and third molars, the first bicuspid, and the canine in a healthy condition. The first molar and second bicuspid had been extracted for alveolar abscess three years previously. The swelling of the face had appeared twice before, for which she had been treated by her family physician. After lancing, a free discharge of pus followed and an opening was found into the antrum. After the usual treatment for five weeks, the discharge ceased, all the parts resumed their normal condition, and the opening in the antrum was allowed to close. In this case the suppuration was caused by one or both of the teeth previously extracted for alveolar abscess.

Case 3.—Mrs. P., æt. 45 years, who had been suffering for several years from intermittent fever, and had also been for some time troubled with a discharge of an offensive nature from the left nares which had been diagnosed as catarrhal, called to consult me about a first molar. Examination showed that all the teeth, from the canine including the third molar, had been removed, excepting the first molar. This was badly decayed, loose, and upon pressure, pus oozed from the socket. The tooth was extracted, disclosing a cavity into the antrum corresponding to the roots of the teeth. The extraction was followed by a copious, purulent, offensive discharge. There was considerable necrosis present. After treatment for over two months without any perceptible improvement, the patient left the city for the summer, and was under treatment while absent. At the expiration of four months, she returned, yet without improvement. Upon a thorough examination, a septum of bone, about one-quarter of an inch in height was found rising from the floor of the antrum, dividing the cavity into two parts. By means of a chisel, this septum was removed and found to be composed of cancellous tissue.

After this operation, the case readily yielded to treatment, and a recovery resulted.

Case 4.—Mr. J., æt. 23 years. In this case, there was no nasal discharge, the orifice from the sinus being closed by inspissated mucus. He complained of great weight and pressure on the affected side, severe otalgia and deafness. The second bicuspid was missing, and the first molar having a large amalgam filling was pulpless. This tooth was extracted, leaving a large opening into the antrum. There was also considerable necrosis, which was removed, and the usual stimulating treatment pursued for about four weeks, when the discharge ceased, and all other abnormal symptoms disappeared, excepting the deafness.

Miss S., æt. 19 years, consulted me with regard to a large swelling of the right side of her face. Before examination, I supposed that she was suffering from alveolar abscess; but to my astonishment, upon examination, all her teeth were found in a healthy condition, and the arch appeared unbroken. This clearly did not indicate alveolar abscess, but rather a diseased antrum. As the teeth all seemed to be present, I inquired whether she had previously received a blow upon that side of her face, or whether she had not recently contracted a severe cold. Receiving a negative reply to these questions, I made a second examination, and found that the first bicuspid was missing. She positively assured me that none of her teeth had been extracted. As the swelling pointed to the palatine as well as the facial surface, I lanced both surfaces, and was enabled to pass a probe from the facial surface into and through the floor of the antrum. She was dismissed until the next day, when I made a careful exploration of the sinus by means of an excavator, and found in the floor of the antrum the missing tooth imbedded in the inner coat of the mucous membrane, its apex toward the alæ. After the swelling subsided, the tooth was dislodged by means of a hoe excavator, and removed by means of a long, narrow-beaded forcep. After four weeks' treatment, the case was cured.

During the past eight months, in addition to the cases in my own practice, I have operated upon fourteen cases of diseased antrum for a throat and nose specialist. Of these cases, none resulted from chronic rhinitis, none from hypertrophic rhinitis, one from dentigerous cyst, two from polypi and eleven from diseased teeth. This seems to me clearly to refute the assertions of the authorities previously mentioned—that suppuration of the antrum is generally due to causes other than diseased teeth.

DR. RICHARD VOLKMAN, the famous surgeon of Halle, died at that city on the 28th ult.

REPORT ON INTUBATION OF THE LARYNX.

Read in the Section of Diseases of Children, at the Fortieth Annual Meeting of the American Medical Association, June, 1887.

BY F. E. WAXHAM, M.D.,

PROFESSOR LARYNGOLOGY AND RHINOLOGY COLLEGE PHYSICIANS AND SURGEONS, OF CHICAGO; PROFESSOR LARYNGOLOGY AND RHINOLOGY POST-GRADUATE SCHOOL, OF CHICAGO.

It is my pleasure, Mr. Chairman, to report that intubation is still growing in favor, and fulfilling the expectations of its advocates. At the last meeting of this Association, I reported 150 cases coming under my personal care, with forty-one recoveries or 27.33 per cent. During the past year I have operated sixty times, with twenty-eight recoveries or 46.66 per cent.; making a total of 210 cases with sixty-nine recoveries or 32.85 per cent. The operation performed as it is, as a last resort, when the patient has been given up to die and other measures have been tried in vain, a saving of one out of three is a most satisfactory result, and places the procedure in the front rank among the life-saving operations.

It will be observed that the percentage of recoveries during the last year has been much larger than before, amounting to nearly 50 per cent. An interesting question arises as to the cause of this greater success. Some have unkindly attributed it to unnecessary operations, operations performed early and upon those that might have recovered under judicious medical treatment. It is only necessary, to say in reply, that more than nine-tenths of these cases are in consultation with other physicians, and the operator has been called only as a last resort.

The operation is not performed early, but in many instances only after the patient has become moribund and unconscious. Early operations do not enter into the question of increased success as the operations during the past year have been performed under the same conditions and circumstances as before. The question of treatment and its influence upon the results is an interesting one, but the observations have been too few to be of any great importance in this direction.

Of the sixty cases coming under my care during the past year, nineteen were treated with the bichloride of mercury, both before and after the operation, with nine recoveries or 47.36 per cent. Twenty-eight cases were treated with this agent, after the operation only, with fourteen recoveries or 50.00 per cent. Thirteen did not receive the bichloride of mercury either before or after the operation, and there were five recoveries or 38.46 per cent.

The type of the disease prevailing during the past year has not been different from that in former years, and the cases have been of equal severity.

The success during the past year I attribute to two causes: Improved methods of feeding and

greater experience, and better judgment in the management of the cases.

During the past year the greatest advance that has been made, has been the discovery of the proper method of feeding. The greatest objection that has ever been raised to intubation has been on account of the difficulty of feeding.

The falling of fluids and semisolids into the trachea, and their entrance into the finer bronchi giving rise to broncho-pneumonia, I have no doubt has too frequently been the cause of death. The objection and the dangers have been overcome by the adoption of the inclined position with the head down, during feeding or when drinking. One year ago I presented to this section a set of tubes with artificial epiglotti. These tubes answered a useful purpose, and were a great improvement over the open tubes while feeding in the upright position, but in the inclined position they are unnecessary, as patients can swallow in this position without difficulty.

Another cause of the greater success during the past year, is to be found in the increased knowledge that comes with experience, and the more watchful care of patients. Many cases have been saved only by the most watchful attention, and by timely interference.

A frequent cause of death is detachment of membrane and sudden suffocation from obstruction below the tube. This danger has never been exaggerated, but too frequently ignored. To overcome this danger I have had the tubes constructed with less swelling in the centre that they may be easily expelled. If they are ejected every few hours, no harm is done providing the operator is within reach to replace them. In case of partial detachment of membrane, which will be indicated by a hoarse cough, we should not wait, but anticipate the danger by removing the tube. The expulsive cough following the removal of the tube almost invariably expels the membrane.

Nothing is more dangerous in these cases, than to introduce a large tube that fits tightly and which cannot be expelled, and then leave the patient in fancied security. The record of my cases for the past year is as follows :

Age.	Cases.	Recoveries.	Per cent.
Under 2 years	11	3	27.27
Between 2 and 3	8	2	25.00
“ 3 and 4	9	4	44.44
“ 4 and 5	17	8	47.05
“ 5 and 6	4	3	75.00
“ 6 and 7	3	3	100.00
“ 7 and 8	5	4	80.00
“ 8 and 9	2	1	50.00
One 12	1	0	00.00
	60	28	46.66

Remarks.—The youngest child operated upon was 6 months old. Those under 2 years that recovered were 15, 18 and 18 months, respectively. Every case, with one exception, was characterized by membrane formation. In the exceptional

case the stenosis of the larynx was complicated with a severe form of measles, and the patient died.

240 Wabash avenue.

DR. GEO. W. GAY, of Boston, said that the statistics of the Boston City Hospital were slightly in favor of tracheotomy, but intubation is more frequently done, being, on the whole, easier to perform. Of 327 tracheotomies 95, or 29 per cent., recovered; while of 223 intubations 47, or 21 per cent., recovered. In some cases, however, it was impossible to introduce the tube into the larynx. To perform intubation requires as much assistance as it does to make a tracheotomy, and there is as much danger of death on the operator's hands as there is during tracheotomy. In 310 cases of tracheotomy 10 had died from ether, shock, prostration or hæmorrhage; in intubation an equal number of cases died from strangulation or shock. Even if deposited with the utmost care, there was a moment of strangulation in every case. If this did not immediately pass off, the tube should be removed, and the membrane which causes the obstruction will be coughed out. It is dangerous to persistently try to force in a tube that always causes strangulation. When stenosis is not relieved by the intubation tube, when swallowing is impossible, or when the tube is constantly coughed up, tracheotomy is indicated. In 32 cases in which tracheotomy was done, after intubation had failed to give relief, 3 had recovered. There is no fixed treatment for croup, aside from the operation. He had used bichloride of mercury faithfully for two years. At one time he thought he saw benefit from it, but now he said that the facts do not warrant any conclusion. Feeding after either operation is most important; after intubation it should be done with the child lying on the side or on the back, with the head well down. There is no pathological evidence that the inspiration of food causes death. It is well known how the tracheal canula blocks up after tracheotomy. After intubation it does not. The trachea may fill up below the tube, but the tube remains clear. Outside the hospital Dr. Gay performs intubation among poor people who cannot properly care for a child after tracheotomy. He saw the child as often as he could. A certain number will always be lost from inability to find the operator when the tube becomes blocked, or when it is coughed out. In his judgment intubation is the better operation in ordinary cases.

DR. DENISON, of Colorado, said that from 60 to 70 per cent. of the deaths after intubation were the result of pulmonary complications. He had operated upon 25 cases, with 7 recoveries. Nine of the deaths were due to œdema of the lungs. In Colorado, on account of the rarefaction of the air, breathing is difficult, and little children were

very seriously affected by it. In one of his cases he noted that the pulse was very weak during inspiration, and stronger during expiration. The blood could not get out of the thorax during the labored inspiration, and this greatly interfered with the heart's action. He operated, and recovery resulted.

DR. E. F. BRUSH said that he had written the first article on intubation. He found Dr. O'Dwyer patiently working in his laboratory, perfecting the operation and apparatus, and was given permission to publish the results of Dr. O'Dwyer's work. He had gone enthusiastically into the use of intubation, but his results so far had not been favorable. He had performed 23 intubations, with but one recovery. One was an adult, who lived twelve hours after the operation. Experience leads him to agree with Dr. Gay as to the necessity of great care in the introduction of the tube. When called as a consultant it was necessary for the physician to carefully examine the case. It was useless to operate for pulmonary oedema, which might be mistaken for croup. He doubted the entrance of food into the lungs, and said he thought it was the great irritation set up by the cough that brought on the pneumonia when it was not the result of extension of the throat disease.

DR. J. A. LARRABEE's experience was confined to tracheotomy. From the reports up to the present time the honors were about even between the two operations. Intubation was credited with being easier than tracheotomy, but this arose from different personal experiences. Some men acquired a delicacy of technique, like that of Tait in ovariectomy, or Waxham in intubation, which few can possess. To him intubation was the more difficult operation. It was more popular among the people, because it appeared to be a less formidable operation. No distinction is usually made by operators between croup and diphtheria, but he believes that such a distinction should be made. Membranous croup is a local disease, an exudation without sepsis; diphtheria is a systemic infection. In croup we operate and cure; in diphtheria, operation relieves but one symptom, and there is still the systemic disease to fight. Tracheotomy gives better results, because it does not interfere with medication and the administration of food. In infants under 2 years of age and in croup, intubation held the first place; for other cases tracheotomy was preferable. To prevent blocking up of the tubes he used a sponge saturated with warm water placed over the opening of the canula; also stemming of the tube. He was in the habit of pouring into the trachea a drachm of a solution containing chlorinated soda, and found it of great benefit.

THE CLINIC.

THE TREATMENT OF WOUNDS INVOLVING NERVES, TENDONS, AND MUSCLES.

A Clinical Lecture Delivered in the Albany Hospital, Oct. 26, 1889.

BY ALBERT VANDERVEER, M.D., PH.D.

PROFESSOR OF DIDACTIC, ABDOMINAL AND CLINICAL SURGERY,
ALBANY MEDICAL COLLEGE.

[Reported for THE JOURNAL.]

Gentlemen: Permit me to call your attention this morning, in a practical manner, to the management of incised or lacerated wounds involving important nerves, tendons, and muscles. To come directly to our subject we shall present to you a patient, Mr. J. G., aged 22, single, native of the U. S., and by occupation a cigarmaker. He presented himself and was admitted to the hospital two days ago, with the following history: Two days prior to his admission he became involved in a saloon brawl and was struck by a beer glass which broke and inflicted a lacerated wound of the forearm. Hæmorrhage was very free and evidently arterial in character. A physician was called who applied a compress and firm bandage, which was allowed to remain until he applied for treatment at the hospital.

Upon examination at that time the hand was dark colored, much swollen and cold, owing to the compression of the bandage. The dressing was immediately removed, the wound washed, and a moist antiseptic dressing applied, together with moist heat. The first thing necessary was to restore circulation in the constricted parts, in which we have been fortunate. We will now remove the dressing and proceed to an examination of the present condition of the arm. You will observe that the wound is located about two inches above the wrist, beginning at the ulnar border and extending irregularly across the arm for an inch and a half. Its borders are elevated and irritable in appearance. There is an escape of bloodstained serum from the wound. The whole arm is yet swollen, and the circulation is feeble. When requested to flex the fingers the patient is unable to move the little, or ring finger, nor is he able to bring the thumb in apposition with index finger. He cannot flex the wrist to the ulnar side or move the fingers latterly. With the needle an area of anæsthesia is found along the ulnar border of the hand and involving the little and lateral half of the ring finger. The area of anæsthesia does not approach the borders of the wound. Upon closer examination portions of divided muscle and tendon appear in the wound. The pulsation in the ulnar artery is absent at the wrist.

Now what has happened? From the paralysis, both motor and sensory, we know that the ulnar nerve has been divided, or at least its func-

tion destroyed. The free hemorrhage, embarrassed circulation, and the location of the wound, all indicate a wound of the ulnar artery. The presence of muscle and divided tendon in the wound tells us of the damage done to the great flexors of the fingers. Here then we have a divided artery, nerve and tendons which have been under treatment for four days. Shall we continue our present mode of treatment? Shall we adopt a new method? The wound has already improved in appearance. The patient has no material rise in temperature. His general condition is good. But what are the consequences? This patient may have a secondary hæmorrhage at any moment. The wound, if not already infected, is exceedingly liable to become so, and suppuration threatens.

Again, the occupation of the young man requires both hands for him to gain a livelihood, and we can hope for no restoration of function in the severed muscles and tendons, or in the severed nerve. We have ahead of us cutaneous ulceration, causalgia, œdema, and muscular atrophy as tropic changes following division of nerves. Beside there is likely to follow the division of the ulnar nerve, that characteristic distortion, *main en griffe*, or claw hand. Manifestly much more is to be desired, and I believe can be promised, by an immediate operation, to which the patient has consented.

While the house surgeon is etherizing the patient we will recall to your minds the results obtained in similar cases treated by immediate suture in this clinic. First, the case of the carpenter who injured his hand in a planer. He had several incised wounds, compound and comminuted fractures of the outer metacarpals, division of the extensor tendons, and wounds of the palmar arch. Under ether we are able to control the hæmorrhage, to cleanse the wound by warm mercuric chloride (1-2000,) to remove the detached fragments of bone, to suture the tendons, and close and drain the wound. By careful antiseptic and fixed dressing we were able to give him a useful hand, with considerable power for extension.

The case of the colored man, wounded at the wrist by a broken pane of glass, opening the joint and dividing tendons. Cleansing and tendon suture with a most happy result.

The case of the child wounded by falling on a broken bottle, dividing the sciatic nerve in the thigh, high up. Treatment neglected for a year, when the cicatrix was divided and an unsuccessful effort made to find divided nerve ends and suture them.

The case of the young man who received a wound of the fore-arm, dividing tendons, arteries and nerves, and was treated without tendon or nerve suture. All these cases and the subsequent condition of the patients will be fresh in your minds.

As the patient is now ready we will proceed to the operation, beginning with an incision extending from the wound upward along the ulna two inches. A large blood clot is uncovered and turned out from between the layers of muscle. Hæmorrhage commences from the divided artery, which is immediately ligated at both ends. The cavity is thoroughly flushed out with warm mercuric chloride solution (1-2000), bleeding points ligated. The extensor tendons of the ring and little finger are found divided and are sutured by fine Chinese silk. Lastly, the divided ulnar nerve is caught up and carefully sutured in a similar manner. The wound is again irrigated with mercuric-chloride solution (1-2000), and closed by interrupted catgut sutures, a small drain being necessary in this neglected wound. Over all an antiseptic dressing of iodoform gauze and Gamgee pads. The arm is now placed in a posterior splint, with the hand well flexed and protected. This wound will undoubtedly heal kindly. Splint should be removed at the end of two weeks, and gentle passive movements commenced to prevent adhesion of tendons. It will be some time before the restoration of the function of the ulnar nerve. In this case we have from experience a reasonable hope for a favorable result.

Finally, gentlemen, I hope you will pardon me for going so much into the details, but I am convinced that if you will faithfully employ the method which you have seen to-day, in the immediate treatment of similar injuries, you will be amply repaid in success for your time and kindly attention.

November 4 and 9 the wound was re-dressed. No suppuration, parts healing rapidly. On the latter date patient could flex all his fingers slightly, but not encouraged to do so. Sensation was returning rapidly to parts supplied by the ulnar nerve.

MEDICAL PROGRESS.

AN EPIDEMIC OF ULCERATIVE VACCINIA.—At a recent meeting of the *Académie de Médecine*, M. HERVIEUX reported the results of his investigations, relative to the appearance of ulcerative vaccinia among the school children of Motteaux Bois. Of thirty-eight children vaccinated thirty-seven presented the abnormal symptoms observed; these symptoms as they appeared on the thirteenth day after vaccination, consisted of intense inflammatory action, abundant suppuration, lymphangitis, œdema, fever and delirium. The period of incubation was eight, ten and twelve days. Six weeks after vaccination, nearly all of the children had entirely recovered. The virus was obtained from a boy 9 years of age, who presented an entirely healthy appearance with the

exception of lymphatic enlargements affecting the axillary, submaxillary and cervical glands. The boy's parents appeared healthy, but refused to submit to close inspection. A diagnosis of syphilitic infection was first made by the physicians who examined the cases, but this was subsequently changed because of the shortness of the period of incubation.

PHYSIOLOGICAL ACTION OF THALLINE AND ITS CONTRAINDICATIONS.—As the result of his experiments in the use of thalline M. ALBERT ROBIN formulates the following conclusions:

1. Thalline is a poison to the blood globules, the nervous system, and in general to tissues rich in sulphur and phosphorus.

2. Its antiseptic action within the organs of the body is insignificant and transitory.

As a corollary of its physiological action the following conclusions may be drawn:

1. Inasmuch as the antipyretic properties of thalline are united to its toxic effects upon the nervous system and upon the red globules of the blood, this remedy is a false and dangerous antipyretic which should be proscribed in the treatment of fevers.

2. Its power of retarding the elimination of uric acid renders it unfit for use in the uricæmic affections, and consequently in the greater number of cases of arthritis and nephritis.

3. Its prolonged employment tends to produce anæmia and to provoke in time more or less marked nervous disturbances.

4. The study of the effects of thalline points to the entire contraindication of the remedy.—*Le Bulletin Méd.*

STERILIZATION OF MILK FOR INFANTS.—DR. J. EISENBERG recommends the following plan for the sterilization of milk for nursing children: To prevent infection by the lactic ferment or by other microbes the milk should be suitably diluted with sugar water and then poured into bottles of convenient size. The bottles are then stoppered with cotton placed upon a wire tray and plunged into boiling water where they remain for 30 or 40 minutes until sterilization is complete. The contents of the bottles will remain free from alteration for many days. When it is desired to use the milk the cotton plug is withdrawn from one of the bottles and the nipple immediately adjusted.—*Wien. Klin. Woch.*

A CONTRIBUTION TO THE PHYSICAL DIAGNOSIS OF THE INTERNAL ORGANS.—RIESS (*Central. für Klin. Med.*) contributes the results of experiments in the diagnosis of internal organs.

Percussion of the Kidneys:—Riess directs attention to the percussion of the kidneys which he thinks deserves more attention than it has received hitherto inasmuch as it enables us to obtain the principal dimensions of the normal

kidneys. In 30 male individuals he was able by means of strong percussion to outline the kidneys on both sides; their distances from the median line varied from $7\frac{1}{4}$ –11 cm. on the right side and from 7–10 cm. on the left side. In four cases the inferior borders on both sides could not be definitely determined; in a fifth case there was the same difficulty—on the left side alone. The average distance from the crest of the ileum was 2 cm. on the right and 2.5 cm. on the left side. In pathological conditions kidney percussion is especially important as a means of deciding whether the kidney is in its proper location; in the majority of such cases percussion leaves no doubts. Kidney percussion is also important in determining the presence and size of the enlarged organ.

The So-called Metamorphic Respiratory Sound.—RIESS is of the impression that this so-called symptom is by no means of rare occurrence. With the exception of a single case it was always found in connection with cavities; generally several large bronchi were found opening into a cavity. Riess believes with Seitz that this sound is a stenosis sound and explains it in this way: at the commencement of inspiration only one of the bronchi opens, this bronchus is small and in comparison with the other bronchi and the cavity itself it represents a narrowed canal; through a definite increase in the negative pressure established in the interior of the lung by inspiration, one or more of the other bronchi expand, the entering air is divided into several streams and the stenosis disappears.

TRANSMISSION OF DISEASE BY DENTISTS AND HAIR DRESSERS.—A discussion has recently taken place in Paris relative to the possibility of certain diseases through the agency of dentists and hair dressers. The discussion arose in connection with a report made by Dr. Lancereaux before the Council of Hygiene in the course of which he quoted an American dentist, Dr. Cochran, upon the transmissibility of pulmonary phthisis by means of dental instruments.

Dr. Dujardin-Beaumetz said that he did not believe that such a transmission had been demonstrated.

In his conclusions Dr. Lancereaux requests that he be advised of the danger incurred by their patrons in the use of instruments used upon numerous individuals and that dentists and even physicians be invited to carefully disinfect their instruments whenever used. After a long debate in which the difficulty of carrying out such measures was discussed the following provision of Dr. Lancereaux's report was adopted—viz.: that in every school where there are boarders each pupil shall have his own comb and brush which shall be kept for his individual use.—*Le Bul. Méd.*

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SATURDAY, DECEMBER 21, 1889.

TO LIMIT THE CASTRATION OF WOMEN.

DR. C. TRUESDALE¹, of Rock Island, in commenting on DR. MILLER'S² "Laparotomy Record," writes: "My first impression after reading said 'record' was that it was designed as a travesty on the frequency and recklessness with which the operations detailed in the report have been performed during the past five years; but on a more close examination I am convinced that the author intended it to be accepted as a correct report of what he actually did, and that it would be considered by the profession generally as a very brilliant feat of gynecological surgery. Assuming such to be the case, I am reluctantly constrained to say the report, as a whole and in detail, is simply astounding and to me incomprehensible. Forty-two women spayed, unsexed, mutilated in one year in a small out-of-the-way town in West Virginia!"

In the record, thus forcibly referred to by Dr. Truesdale, Dr. Miller does not enlighten us to a sufficient degree on the conditions and indications under which his operations were performed, so that we do not feel justified in entering into a detailed criticism of his "Year's Work in Laparotomy." Yet, in passing, we must confess our hearty sympathy with Dr. Truesdale in his indignant protest against what appears to be an unparalleled example of recklessness in abdominal

surgery. Dr. Miller's boldness is not lessened by the fact that his so-called report is merely a list of alleged successful abdominal sections. It is of little scientific value, inasmuch as the anatomical material has not been utilized, and because the ultimate results of the operations have not been stated. We allude to Dr. Miller's record merely as a text. Recklessness in the performance of TAIT'S operation is well-nigh universal, and it is high time to consider some effective method of limiting this pernicious activity. Within a very recent period three typical instances of the removal of the uterine appendages in the absence of a sufficient indication have come under our own personal observation, which we beg to note in the further illustration of the awful abuse of a valuable operative procedure. In the first case a young woman was supposed to be afflicted with a symmetrical mural fibroid about the size of a fetal head at term. The ovaries and tubes were promptly removed, but the uterine tumor continued to grow rapidly until, at the expiration of six months, the patient gave birth to a finely developed boy. While this case settles the question of ovarian influence in the determination of labor, and, therefore, is of considerable scientific importance, its history will never receive a more permanent record than the present fugitive notice.

Our second case is that of a wife in excellent health who had given birth to a child every two years for a decade. Fearing further increase in the family she consulted a prominent surgeon on the score of ovarian pain, in the absence of any demonstrable anatomical change. Tait's operation was done, and now both the surgeon and the woman are happy—the one over a successful laparotomy, and the other on her freedom from child-bearing. Of course the woman lied, but this fact does not palliate the surgeon's criminal stupidity in diagnosis, nor his unwarrantable haste in operation.

The third case presents an example of the transcendental casuistry by which a man of average candor and honesty may bring himself around to the commission of an atrocious crime. A young, highly educated woman, of a rather nervous temperament, is happily married for the space of three or four years. Eighteen months after marriage she becomes the mother of a healthy child; one and one-half years later a second in-

¹ Am. Journ. of Obstet., October, 1889, p. 1,045.

² "A Year's Record of Seventy-five Successful Cases of Abdominal Section," B. Curtis Miller, M.D., Charleston, W. Va. Am. Journ. of Obstet., July, 1889.

fant comes into the world. About the time of the birth of the second child the husband acquires the morphine and cocaine habit. The wife, passionately devoted to him, is at once thrown into a nervous, hysterical state, and her importunate solicitude irritates her husband into still greater excesses. Upon the occasion of one of these uncommonly prolonged debauches the wife takes a dose of chloral with suicidal intent. At last the husband, who is not unfamiliar with medicine, conceives the idea that his wife's tubes and ovaries are at the bottom of the domestic troubles, and he seeks professional advice. Bimanual exploration fails to reveal any anomaly whatever of the pelvic viscera. Moreover, the history of the two recent, normal pregnancies at short intervals is brought forward in evidence of the physiological condition of the woman's genital system. Finally the wife herself asserts, in the presence of witnesses, that her nervous condition is due solely to her anxiety about her husband's unfortunate habit. By more than one physician the husband is urged to reform himself, as the surest means of curing his wife. But all to no purpose, for the man, in his wretched, irresponsible state of mind from the use of narcotics, finds a legally qualified practitioner that immediately relieves the wife of her perfectly normal tubes and ovaries. The woman has recovered from the operation, but her state of mind is unchanged, and it must remain unchanged, so long as the original cause of the mental disturbance is operative. As before remarked, this case is of especial interest to the student of casuistry, to whom may be left the analysis of the peculiar mental process by which this practitioner brought himself to the point of operating.

Only a few months ago a case was unblushingly reported in the *Boston Medical and Surgical Journal*, in which normal tube and ovaries were cut out of the body of a young unmarried woman under the indication of masturbation!

It is needless to multiply examples of this prostitution of surgery. Let us turn to the more hopeful topic of prevention. To begin, it may be said that the profession itself is amply able to arrest the further progress of this horrible heresy. There is no occasion to institute a crusade, to invoke the power of the press, as HORACE GREELEY did against bleeding; neither is the necessity apparent of calling upon the "Society for the Pro-

tection of Women," nor upon the local and national Legislatures.

The method of limiting the castration of women that we propose is simple, and we believe it will prove efficient. Make it an essential condition to the performance of Tait's or of Battey's operation, in all cases presenting no gross tangible lesion of the organs, that there shall be held a consultation of at least three responsible physicians.

We believe that this plan would secure accuracy of diagnosis. Now, it is a fact that the expert spayer of women is not always equally adroit in the recognition of anatomical changes nor in the interpretation of morbid processes. And the best of men often mistake the nerve-counterfeits of uterine and ovarian disease. WILLIAM GOODELL³ has raised a voice of warning upon this topic, which merits the serious attention, that it will doubtless receive. Then, too, when this condition is fulfilled, we are of the opinion that slight and harmless enlargements of the ovaries will be regarded less frequently as morbid phenomena under such euphonious titles as "ovaritis," "cirrhosis" and "cystic degeneration." This statement does not deny the existence nor the moment of such pathological alterations, but it does imply that insignificant changes in the ovarian stroma, in the one case, and in the ovisacs, in the other, are often misnamed, and invested with a purely imaginary dignity in pathology.

BENJAMIN RUSH did not like consultations. He said they were the ineffectual result of neutralized opinion. But this "neutralized opinion" and its consequent delay in action represents exactly the end, we hold distinctly in view.

For a long period, the formal assent of three qualified practitioners has been insisted upon as a necessary condition to the artificial induction of abortion, and experience has demonstrated the wisdom and efficiency of the injunction. In former times, this operation was abused much in the same manner and degree that the castration of women is now prostituted. But under the influence of this condition—the primary factor, as we think,—clear and distinct indications have been formulated, which determine the action of all physicians, that respect their art and reputations.

It goes without saying that the consultants

³ "The Abuse of Uterine Treatment Through Mistaken Diagnosis." *The Medical News*, December 7, 1889, p. 621.

must be responsible men, the peers of the would-be operator, and not subordinates, that might naturally be expected to echo the opinions of their chief.

LOCAL MEDICAL SOCIETIES.

The need of higher standards of medical education in the United States is universally conceded. Indeed the persistent efforts of many of our leading medical colleges and an earnest advocacy on the part of our prominent medical journals have rendered much valuable service in this direction. Some of our schools are now making such requirements as would remedy the evils of illiteracy were their standards to be generally accepted.

But it is idle to presume that the profession can be purged of incompetency while any medical school, if it shall so elect, may barter its diplomacy as merchandise, and be alone responsible for the proficiency of its graduates. If short terms of study are advertised, if low fees only are required, and if a surety of graduation may be anticipated, it will not be singular if such schools receive a liberal patronage, and the medical profession continue to suffer from the influx of such illiteracy.

While the great majority of our able physicians and the best of our medical colleges may most earnestly desire it otherwise, yet the fact remains that no appeal to reason—to honor—or to the interest of humanity will suffice to remedy the evil and compel a certain class of colleges to the needed reform. Only compulsory legislation will meet their cases and let us be thankful and take courage in the fact that legislation can do it.

It is not within the province of the general government to deal with this matter *but* it is competent for the several States so to do.

This vested right is not only conceded, but already many of the States are acting in recognition of that right and in several of them the thoroughness of legislation leaves little more to be desired.

Medical legislation in the several States must of necessity be largely influenced by an intelligent expression on the part of the profession as to what the general good requires. It is due to the several legislative bodies that the needs of their State, so far as regards medical legislation, be clearly and wisely set forth. The leading medi-

cal men of a State more than any others are competent to indicate what such legislation should be.

The expressions of their judgments should be clear, concise and just, and coming to an intelligent body of legislators such an expression, from a united profession, will largely influence its action.

In the attainment of such results it is essential that the entire local societies of the several States be ably represented in their State organizations. It is here that any conflicting views may be reconciled. It is here that the influence of the medical men of a State may be best harmonized and unified. It is in our State Medical Societies that the appropriate measures can be devised by which to secure needed legislation, and it is through the agency of its members located in the various sections of each State, that the individual members of the State Legislatures can be reached and their favorable action be secured. If, then, the future advancement of medicine in America shall be dependent in large measure upon State legislation, and if the several legislative bodies are to be successfully influenced by concerted action on the part of the medical profession, and if that concerted action can be secured through the harmonious working of State Medical Societies, does it not follow that with them more than with any other medical organizations rests the responsibility of securing to our country that immunity from ignorance, charlatanism and quackery to which as free and intelligent people they are entitled. Recognizing the failures of simple persuasion in the past, let us address ourselves to the only efficient remedy—that of appropriate State legislation.

EDITORIAL NOTES.

HOME.

THE NEW YORK SYSTEM OF CORONERS.—The New York Society of Medical Jurisprudence has had under discussion the abuses of the system of coroners and a committee has been empowered to draft a law which, if enacted by the next session of the Legislature, will abolish that antiquated system. In its place, the Society desires to see inaugurated a system of medical examiners resembling that which has succeeded so admirably in the State of Massachusetts. It is stated as an actuality that during a recent inquest, the Coroner asked a witness if the *rigor mortis* was a sure sign of death, and again, if there was any way of determining if a post-mortem had been

performed before death. The fierce light that beats upon the office of coroner has of late revealed so little that is creditable to it, that it cannot long perpetuate itself in an intelligent and observant community. The present Board of Coroners find the proposed legislation highly objectionable and retort upon the society, above named, that its real object is to manufacture new officers for some of its medical associates.

MEMORIAL TO THE LATE DR. CABELL.—A memorial window is to be erected in the new chapel at the University of Virginia in memory of the late Dr. James L. Cabell.

It is stated that another Woman's Medical College is to be started in Cincinnati.

THE WIDOW OF THE LATE DR. C. R. AGNEW has been appointed by Mayor Grant a member of the Board of Education of New York.

PHILADELPHIA MEDICO-LEGAL SOCIETY.—At a recent meeting of this Society the following were elected officers: President, Dr. W. F. Waugh; First Vice-President, Dr. Martin; Second Vice-President, Dr. W. Buckby; Recording Secretary, Dr. Horace K. Reeger; Corresponding Secretary, Dr. T. H. McBride; Treasurer, Dr. G. M. D. Peltz; Board of Censors, Drs. Connor, Hazel and Stewart; Librarian, Dr. Nash.

A PHYSICIAN TAKEN WITH PARALYSIS WHILE ACTING AS CHAIRMAN.—Dr. J. P. Bancroft of Concord, N. H., was the presiding officer at a meeting of the New England Psychological Society, when he noticed a gradual loss of power creeping over his left side. He had the fortitude to remain in the discharge of his duties and put the motion to adjourn, although his fellow members were, at that very moment, assisting in maintaining his erect posture. *The Boston Medical and Surgical Journal* takes pleasure in reporting that Dr. Bancroft has not been seriously paralyzed, but has manifestly improved in muscular power since the time of the attack.

FOREIGN.

MEDICAL PROGRESS IN CHINA.—The Chinese government has determined to form medical bureaux for the army and navy, upon Occidental models; requests for information from the United States departments have been made in regard to hospital organization and ambulance service. A

foreigner will be made Surgeon-General, with an adequate staff of assistants who have been trained in the schools of the civilized world. A beginning will be made in northern China, by the building up of a medical college and several hospitals and dispensaries at a number of the military stations in that part of the kingdom. Native surgeons will be appointed to the fleet, chiefly from among young men who have been educated in this country, under the auspices of the Chinese Educational Mission. The importance of this step, in the way of medical reform, is very great, since it gives the stamp of official recognition, in departments of highest influence, to the modern systems of military and naval service, and sends into retirement the effete methods that have hitherto been honored.

THE SOCIETY OF MUTUAL AUTOPSY AT PARIS had for one of its members the late General Faidherbe. His will explicitly bequeathed his body, and especially his brain and skull, to the Laboratory of Anthropology to be utilized for the benefit of science. The carrying out of this behest has been opposed by the General's widow and heirs, on the ground that the "ravages of disease have rendered an examination undesirable," and it will probably be frustrated. Among the early members of this Society who have been true to their post-mortem obligations, were Dr. Paul Broca and Gambetta. When Gambetta's brain was dissected it showed a marked development of Broca's convolution, and since he was one of the most fluent men in his generation, he was thought to have furnished a happy confirmation of Broca's theory.

THE INTERNATIONAL MEDICAL CONGRESS OF 1890.—The Budget of the German Imperial Home Office allots 80,000 marks as a contribution to the expenses of the Tenth International Medical Congress, which is to meet in Berlin next year, and assigns the following reasons: "The considerable expenses which these congresses entail are, as is proved by experience, only partly covered by the contributions of the members, so that, on former occasions, especially at the last congresses in Copenhagen and Washington, considerable subsidies were granted by the respective governments from public funds for the defrayal of the expenses. It will not be possible for the empire to lag behind other States in this respect."

TOPICS OF THE WEEK.

A VOICE ON MEDICAL EDUCATION FROM CALIFORNIA.

It is well known that the medical schools of California have exacted a preliminary examination of their students, and three years of college study. But it is also true that the State Board of Examiners have recognized the diplomas from medical schools elsewhere that made no such requirements. At this late day this Board has determined that on and after April 1, 1891, it will refuse to recognize the diplomas from all medical colleges that do not exact from their students three years of college study. This is well, but the requisition of the same years ago, would have been still better.

The California medical colleges require a preliminary examination, why does not the State Board exact such an examination of the medical colleges whose diplomas it recognizes? The claim of the *Pacific Med. Journal* that this Board should exact from the colleges whose diplomas it recognizes at least as high a grade of preparation as that demanded by the California medical colleges, seems to us perfectly reasonable. We hope that it will continue to press the matter until the Board has done its duty to the colleges of its own State, and the medical profession everywhere. It is difficult to understand why this Board has not already done this scant justice to the cause of medical education. If there is any lack of doctors for the needs of the people of California, the colleges have adequate machinery to supply the demand.

Generally the medical colleges resist the line of progress, but in this State it seems that the colleges are ahead of the State Licensing Board.

Many are the discouragements of those who seek the uplifting of the medical profession to a higher grade of scholarship, general and special, but it would seem that no State Board should stand in the way of such advancement. In the case of the California Board we read the indication, from its requirement of three college years after next year, that in the near future it will still farther advance in the matter of preliminary education.

We venture to make a suggestion respecting the preliminary examination, viz.: that it shall require as evidence that any college has exacted a proper preliminary examination in any given case, a diploma of the degree of A. B., or a certificate signed by the President and Secretary of a standard literary college, showing that the holder of said certificate has actually passed the examination requisite for admission into the Freshman class of said college. This is an entirely feasible requirement, and would give confidence in the actual preliminary training of the applicants for admission to the medical colleges. The time has come to insist that all the applicants for entrance into the professions must pass first through the literary or scientific colleges. It should be the business of the professional schools to compel those desirous of admission to their doors, to show that they already possessed the proper training for the intelligent and profitable pursuit of the studies there taught.

There are indications that the time when this may be realized is approaching. But the friends of this progress

must not slack in their efforts to fulfil the conditions necessary to this end. California listens to the voice from Minnesota, Minnesota responds to the cry in Virginia, Virginia shows that she heard the speech from North Carolina, North Carolina proved that she had heard the voice from Illinois, from all these States Montana drew the inspiration that induced it to organize for the uplifting of the medical profession. These one by one listened to the individual and collective efforts by many earnest teachers of the better way echoing through the corridors of the past century. The conflict is between ignorance, greed, selfishness, vanity, and hoodlum on the one hand, and intelligence, unselfishness, manly integrity, and professional spirit on the other. The issue at the last none can doubt, but the speedy realization of this issue depends upon the vigorous and self-denying efforts of its advocates.—Correspondence, *American Lancet*.

PROFESSOR NUSSBAUM ON RECOVERY AFTER WOUNDS AND OPERATIONS.

PROFESSOR NUSSBAUM has found that a very good prognosis of the healing of surgical wounds can be obtained by examining the secretion from the surface during the first two or three days. If this be sanguinolent, prognosis is more or less bad. Care must be taken not to confound any slight after-bleeding with true sanguinolent secretion. The prognosis is only bad where the secretion from the whole surface of the wound is tinged with blood. Thus, when a day after a litholapaxy has been performed the urine is quite free from a reddish tinge the prognosis is good, or if two or three days after the amputation of a breast when the dressing is changed there is no general sanguinolent stain on the latter, but only, may be, a few little blood clots here and there, it is most likely that the wound will heal satisfactorily. Again, if the secretion becomes free from blood on the fourth or fifth day, the prognosis, though not quite so satisfactory as if there had been none at all after a few hours, is still decidedly better than if it continues bloody up till the sixth or eighth day. In such a case the patient is sure, if he recovers at all, to be very slow about it. In phthisical persons and hard drinkers there is nearly always a great tendency to a prolonged secretion of sanguinolent matter after wounds, and sometimes the tinge remains throughout the healing process, which is in these cases very tedious. When the secretion on the first day is free from blood, it shows that the capillaries are closed, and therefore that the intracapillary pressure is normal. Again, it is evident that when the intracapillary pressure is low the endosmose and the exosmose between the vessels and the tissues cannot be taking place properly, and thus that the due healing of the wound cannot be expected to proceed as it ought.—*The Lancet*.

MEDICINE AND THE ARTS.

Every now and again comes a cheerful reminder that the pursuit of medicine does not destroy artistic perceptions, even though it is currently held that devotion to any science tends to develop the "scientific frame of mind" until it is all-absorbing. Those who have had no

scientific training never seem to weary in denouncing the avidity for facts and the scepticism for theories with which they credit those whose habit of thought differs in many respects from their own. The medical profession in particular is selected for cheap satire. The interest of the dissecting-room and physiological laboratory and the watchful anxiety bestowed upon hospital patients are alike misunderstood by many who have never penetrated the inner life of a medical man. To those who know, however, there is a deal of human nature in the medical profession, and it seeks expression and distraction in many unsuspected directions. Painters, etchers and photographers abound in our ranks, while music not only claims many instrumentalists, but even the publication devoted to Wagner and all things Wagnerian is edited by a member of our profession. In such meditations upon harmony does Mr. W. Ashton Ellis find repose in the midst of the turmoil of conflict on behalf of the Members of the Royal College of Surgeons in their endeavor to obtain a restitution of their corporate rights. The current number of the *Meister*, with its article upon the Bayreuth Hush, seems pervaded by a sense of peace in striking contrast to the correspondence so ably conducted at the beginning of the year.—*The Lancet*.

PASTEURISM IN BRAZIL.

Statistics recently published by our Brazilian contemporary, the *Revista Medica de S. Paulo*, state that the first antirabic inoculation carried out in Brazil was performed at Rio de Janeiro on February 9, 1888. Between that date and August 14, 1889, 342 persons had presented themselves at the institute. Of these, 135 had been bitten by dogs quite free from disease, 14 had not been bitten at all, and 37 did not put in an appearance after the first visit. From the remaining 156 who underwent the treatment the director of the institute, Senor Ferreira dos Santos, eliminates 6 more, namely, 5 who, having been slightly bitten by dogs as to which there were not strong grounds of suspicion, did not complete the course, and one who, having been severely bitten on the head, died of hydrophobia during treatment. In this last case, however, the patient had failed to attend ten times in twenty-three days. Three children who were badly bitten by the same dog are still quite well, more than a year having now elapsed from the date of the injury. In 141 cases the bites were inflicted by dogs, in 15 by cats. The condition of the animal was ascertained in 19 cases by positive results following inoculation of its medulla, or by the disease declaring itself in animals bitten at the same time; in 67 by the animal showing unequivocal signs of the disease, and in 70 by its exhibiting "very suspicious" symptoms. Of the 150 cases in which the treatment was thoroughly carried out only one died—a mortality of 0.66 per cent.

THE TALE OF EYAM: A STORY OF THE PLAGUE IN DERBYSHIRE.

The village of Eyam in Derbyshire was desolated by the plague in 1666. For twelve months, from September, 1665, to the autumn of 1666, the ravages of the awful pest were so terrible that only one-sixth of the inhab-

itants were left to tell the story. The villagers solemnly agreed, at the time of "the visitation," that on no account would they pass beyond a boundary line drawn around the village. Food was brought to several points by those outside and placed upon the ground. In the middle of a field at the back of the village are seven stones to the memory of seven members of one family carried off on seven successive days. The author of the poem which tells the story of the pest says:

Long may these stones be left, sad proof to all
Of how our brave men died in that past age.

The picture of utter helplessness in presence of such a calamity is painted by the author in vivid colors. In that age, under such terrible circumstances, a brave man had but to stand still and die; he knew nothing of the origin or the nature of his enemy. How could he fight "the foul and unsurpassed pestilence," of which he knew nothing but that its dart was certainly fatal? Let those who say that medicine has not kept pace with other branches of science read this piteous tale and compare our attitude now in presence of dire disease with that of the poor folk at Eyam, who built a wall round the spot on which they had but helplessly to perish. The author speaks of the pestilence and "its hellborn brood," and again of firebolts from "heaven's reeking nostrils." Such poetic phraseology aptly exemplifies the mental attitude of men who lived in the infancy of modern science, when in the plague (*plaga*—a blow) they saw the angry stroke of offended Deity, and recognized the "scourge" of God in what we know to be only the scourge of filth.—Review, *Brit. Med. Journ.*

NEW ITALIAN REVIEW ON HYGIENE.

A further indication of the progress which is being made in matters relating to public health and sanitary science in the kingdom of Italy is afforded by the promise of the issue next month of the first number of a Review on Hygiene, which will be compiled under the direction of Dr. Eugenio Fazio. The subjects to be dealt with are as follows: Biology, bacteriology, infection and sanitary police, the natural sciences as applied to public health, demography, statistics and sanitary engineering. We are glad to find that the Review will emanate from Naples, for the southern portion of the Italian peninsula stands, we fear, much in need of an educational movement in the direction of hygiene. For this reason, too, the Review has our good wishes.

POST-GRADUATE COURSES IN VIENNA.

The number of American and English physicians attending courses in Vienna has again increased this year. Over eighty fresh students arrived here last month from America and England. More than sixty courses on various branches of medicine are conducted here during the whole session. They last from four to six weeks. The courses on Laryngoscopy, Ear Diseases and Gynecology are especially well attended. It is hoped that the proposed Anglo-American Medical Association will soon be formed, as its by-laws will be approved by the Austrian Government within the next few days. Students can easily obtain information here as to the courses, a list of which is published every week by the *Vienna Weekly News*, and is posted on boards, etc., at the Medical Inquiry Office, IX, Maximiliansplatz, 13, and at the English Library, I, Landesgerichtsstrasse, 12.

PRACTICAL NOTES.

DISINFECTION IN CONTAGIOUS DISEASES AND EPIDEMICS.

The Council of Public Hygiene and Health of the Rhone has issued the following instructions relative to disinfection:

1. PRECAUTIONS TO BE TAKEN BY THE ATTENDANTS UPON THE SICK.

Persons caring for the sick shall be provided with garments which must be changed, 1st. When leaving the house; 2nd. During meals; 3rd. When the attendants are obliged to come in contact with healthy persons in the house.

They must wash their hands frequently, especially before meals, with soap and large quantities of water, renewed several times.

2. DISINFECTION OF UTENSILS USED BY THE SICK.

Cups, bowls, plates, spoons, etc. used by the sick, must be carefully cleaned with boiling water and they must not be used by other persons.

The remains of food left by the sick must not be eaten by healthy persons.

3. DISINFECTION OF EXCREMENTITIOUS MATTERS, ETC.

Vomited matters and the dejecta must be immediately mixed with a glassful of an acidulated solution of sulphate of copper, (water 100 grm., sulphate of copper 2 grm., ordinary sulphuric acid 4 grm.) and then thrown into the water closet. The vessels which are used to receive these matters must be first rinsed and then immediately treated with first, another glassful of the acidulated solution of sulphate of copper and then with a large quantity of ordinary water.

In the country these matters must be buried, after disinfection, far from all water supplies for domestic uses.

If matters have been spread upon the floor they must be absorbed by sawdust, which must be immediately burned. The remainder must then be removed by a sponge or clout impregnated with carbolic acid, to be disposed of as hereinafter described.

If bedding, napkins or handkerchiefs have been soiled these articles must be immersed in a solution of carbolic acid, and treated as will presently be described.

4. DISINFECTION OF LINEN DURING THE COURSE OF THE DISEASE.

Body linen, napkins, handkerchiefs and bedding must be disinfected in the house before being sent to the laundry. For this purpose whether soiled or not, when changed they must first be immersed for half a day at least in a tub filled with a two per-cent carbolic solution, they must then be lightly wrung out and placed in

boiling water for twenty minutes or half an hour they must then be put in the wash or sent to the laundry.

It is very important to remember that all discharges from the patient must not be permitted to dry upon the linen.

Treatment by the disinfecting oven is preferable to boiling when this is possible.

The carbolic acid solution thus employed must be turned into the water closet, and not into the sinks.

Linen and dressings of little value must be burned; otherwise they must be disinfected in the same manner as body linen.

5. DISINFECTING OF CLOTHING, BEDDING, CARPETS AND HANGINGS AT THE END OF THE DISEASE.

The clothing of the sick, the bedding, (coverings, mattress, pillows,) and the carpet and curtains of the sick room must be enveloped in cloths moistened with water or a carbolized solution and then be conveyed to a disinfecting oven where they are subjected for twenty minutes to the action of steam without pressure.

These articles must not be returned to their places until the room has been disinfected.

Wearing apparel must also be treated in this manner even if it is to be given away or sold.

6. DISINFECTION OF THE FURNITURE FOR THE SICK ROOM.

This procedure includes several steps which must always be taken in the following order:

1. Moisten the floor uniformly with water.

2. Carefully wipe the ceiling, the walls or the hangings with a cloth slightly dampened so as to remove the dust.

3. Furniture of small value, such as common chairs, etc., must be liberally treated with a sublimate solution (1-1000).

The inside of night chairs should always be so treated.

4. In the more important furniture such as beds and hair mattresses all the joints and crevices must be treated with the solution of sublimate as in the destruction of vermin; waxed and varnished surfaces must be wiped with a cloth impregnated with oil.

5. Upholstered chairs must be beaten and then rubbed with a brush dipped in the sublimate solution.

6. The floor of the chamber and the wainscoting and walls up to a height of 6 feet must be washed and cleaned with brushes and sponges dipped in the sublimate solution.

7. Not later than two hours afterwards a second liberal washing must be given with sponges dipped this time in an alkaline solution (water 100 grm., carbonate or crystals of commercial soda 10 grm.).

At the same time the less valuable furniture

which has previously been treated with the sublimate solution must now be well washed with the alkaline solution.

8. The excess of the solution must be mopped up, the room well ventilated so as to dry the walls and floor as quickly as possible.

The preceding measures ought to insure sufficient security.

In case, however, the rooms to be disinfected can be dispensed with for 48 hours it is well to complete the disinfection by fumigation with sulphurous acid.

For this purpose before drying the room an iron vessel is placed in the middle of the floor; into this is placed flowers of sulphur in the proportion of 15 to 20 grm. per cubic metre of the space to be disinfected. To avoid danger of fire the vessel containing the sulphur should be placed in a large receptacle containing 5 or 6 centimetres of water. The chimney is then stopped and strips of paper are pasted over all cracks where the vapor might escape. Metallic objects which can not be removed are covered with grease. Alcohol is then poured upon the sulphur and ignited. The door of the apartment is then closed and the crevices covered with strips of paper. Sulphurous acid gas is evolved and should be confined for 12 hours at least. The next day the room is well aired. It may be re-occupied as soon as the gas which generally provokes irritation of the eyes and throat is no longer noticed—this will generally be in about 24 hours after the windows have been opened.

Finally when possible it will be advisable to repaper or repaint the walls as the case may be. —*La Prov. Méd.*

SOCIETY PROCEEDINGS.

New York Academy of Medicine.

Meeting of the Section of Obstetrics and Gynecology, November 27, 1889.

This meeting was devoted to a discussion of the use of electricity in gynecological practice.

DR. A. D. ROCKWELL opened the discussion with a paper on

GENERAL OBSERVATIONS ON THE USE OF ELECTRICITY IN GYNECOLOGY,

which consisted of a comprehensive survey of the whole field, with special reference to the rationale of the effects of electrical treatment. In speaking of the faradic current he said that its action on the muscular fibre of the uterus was analogous to that of ergot, although manifestly more prompt and energetic, especially under the influence of the positive pole. By this action a veritable interstitial massage was obtained, and it was potent in overcoming the primary inertia of the uterus

and in preventing an arrest of retrograde metamorphosis, through which comes subinvolution and its inevitable and persistent sequelæ. When the processes that went to make up the graver and more chronic diseases of the uterine parenchyma and its lining membrane has continued a long time, he said, the galvano-chemical cauterizing effects of the galvanic current are called for in the treatment. By the interpolar influence of the current we correct a languid nutrition and hasten the absorption of exudation. The positive pole has an action peculiar to itself, which is directly hæmostatic, and it is therefore indicated in all hæmorrhagic conditions, as well as when there exists an excess of the natural secretion. On the other hand, the absorption process is undoubtedly more active under the influence of the negative pole, and is especially indicated in indurated chronic metritis and for the resolution of fibroids. That the galvanic current often completely dissipates fibroid tumors of the uterus few would affirm, but the symptoms can be relieved, to a greater or less extent, by electrolysis, and sometimes so completely as to lead to the belief, so far as the patient is concerned, that the tumor has entirely disappeared.

Dr. Rockwell is a believer in the great utility of the galvanic current in the absorption of the thickenings and infiltrations resulting from inflammation of the pelvic cellular tissue, and in dissipating uterine and ovarian pain. He related a case in which the patient had suffered intensely from dysmenorrhœa for six or seven years, and had finally submitted to extirpation of the ovaries for its relief. The flow had gradually diminished, but the pains had only increased in severity after the operation. Under internal applications of the galvanic current, however, the paroxysms yielded rapidly, and in a few months recovery was complete.

Next came papers on *The Treatment of Certain Pelvic Tumors by Galvano-Puncture and Drainage by the Vagina and Intra-Uterine Galvanization*, and on *The Galvanic Treatment of Uterine Fibromata*, by DR. A. A. GOELET and DR. E. L. H. MCGINNIS. Both these gentlemen have visited Apostoli in Paris and carefully studied his methods. One of the most interesting portions of Dr. Goelet's paper was that in which he spoke of the electrical treatment of hydrosalpinx and pyosalpinx. In hydrosalpinx he uses the negative pole through a canula, with not more than 50 milliamperes for five minutes at a time. In pyosalpinx the cavity should be washed out with an antiseptic solution and the positive pole be employed, as being less irritating, and because it is believed to be more antiseptic. He stated that the cauterization of the track of the puncture by the current shut it off from the surrounding tissues and rendered the absorption of septic material through that channel impossible; and if a dressing of iodo-

form gauze were kept constantly renewed in the vagina there was nothing to be apprehended from that source. Resolution in the diseased tube was promoted by the influence of the current, and was still further favored subsequently by mild positive galvanization of the endometrium. He limits this treatment by aspiration to such tubes as are close to the vaginal wall, and when fluctuation may be distinctly felt. This treatment was suggested to Dr. Goelet by observation of three cases of radical cure of hydrocele accomplished by the method. He has also successfully treated in the same way small cysts close to the vaginal wall, though fibro-cysts are sometimes more obstinate in yielding. A considerable portion of the paper was naturally devoted to the treatment of fibroids, and near its conclusion he quoted the following opinion of Thomas Keith in regard to electrical treatment and hysterectomy: "Apostoli's method, though slow and requiring much patience, tenderness of manipulation and thought, is still sure in its results. . . . Hysterectomy, which is performed every day for a complaint that rarely of itself shortens life, kills every fourth or fifth woman that is subjected to it. This mortality must cease. It is not a question of surgery; it is a question of humanity. Every time that any disease can be cured without resorting to a bloody and dangerous operation, such as hysterectomy, progress is made in our art and there is gain to humanity, while surgery is the better for being purged of a deadly operation."

DR. A. H. BUCKMASTER, of Brooklyn, read some

NOTES ON THE TREATMENT OF FIBROMATA BY ELECTRICITY.

He gave an account of a series of original experiments made for the purpose of testing the direct effect of electricity on various tissues. He used the exposed heart of a living dog for the passing of the current, as presenting a tissue as nearly analogous as possible to myo-fibroma.

DR. A. LAPHORN SMITH, of Montreal, read a paper on

BIPOLAR FARADIZATION IN GYNECOLOGY,

in which he spoke highly of the use of the coarse wire coil in post-partum hæmorrhage, in subinvolution due to the defective contraction of the uterus, in deformity and displacement of the uterus due to relaxation of its own walls or of the muscles which hold it in the center of the pelvis, etc. He mentioned the following as advantages of the bipolar method: 1. It is less painful than the old method. 2. It is easier to apply. 3. It allows a much stronger current to be tolerated. 4. It is, consequently, more effective, because the higher the intensity of the dose, the more marked the effects.

There are three kinds of cases in which Dr. Smith has found the fine wire bipolar faradization

remarkably beneficial, viz: 1. Ovarian pain where no organic disease can be found. 2. Abdominal pain due to hysteria. 3. In women about the age of 30, who, though fleshy and apparently well supplied with blood, do not menstruate at all, or only very slightly, and are apt to become hypochondriacs. 4. In vaginismus, which he considers to be due to hyperæsthesia of the nerve terminals about the entrance of the vagina, and is really a form of vaginismus.

DR. P. F. MUNDÉ, in the discussion which followed, said he could speak most decidedly in favor of electricity in gynecology, and that he had seen more benefit derived from galvanism than faradism. He had also found that mild currents employed for a long time were, as a rule, more efficacious than strong currents used for a short time. He did not regard the milliampère metre as of much practical value. When using galvanism for the relief of pain he thought the sensations of the patient were a sufficient guide as to the strength of the current employed. When, however, the current was used in patients under an anæsthetic or for the galvano-puncture, he considered the metre necessary.

He said that he had employed electricity once with success in extra-uterine pregnancy, but as the shock was so severe as nearly to kill the patient, he was at present somewhat undecided as to whether this was the best plan of treatment or not. In pyosalpinx and pelvic abscess laparotomy and drainage are, in his opinion, certainly preferable to galvano-puncture. Out of 123 cases of uterine fibroids coming under his observation only eight seemed to him to require Apostoli's method, while four others called for galvano-puncture through the vagina. The latter appeared to him to be the ideal treatment for the cure of this class of tumors, and in all four of the cases in which he resorted to it the growth entirely disappeared and the patients were absolutely cured. In regard to Apostoli's method, with intra-uterine galvanism and the clay electrode on the abdomen; while it was unquestionably true that it relieved pain and checked hæmorrhage and that patients generally felt better for its use, in not a single one of the eight in which he had employed it had the tumor been much reduced in size.

DR. FRANKLIN H. MARTIN, of Chicago, exhibited an admirable

NEW PORTABLE BATTERY,

which he said was the outcome of a series of experiments made with the end in view of bringing forth a small portable battery which would possess none of the objectionable features of the ordinary form, and at the same time do the same amount of work as that required of the office stationary battery. The cell is a form of the chloride of silver cell, of sufficient power to give

an electro-motive force of 1 volt, and an ampèreage of $\frac{8}{10}$ ampère; so that a battery of 50 cells will do the same amount of work that 36 to 40 Leclanché cells will accomplish. Next to treatment of uterine fibroids by galvanism, he said he had found the greatest satisfaction in treating inflammatory exudates of the pelvis, the best results being obtained in these cases from comparatively strong doses, of from 75 to 125 milliampères. His experience in the treatment of uterine fibroids by electricity amounted in round numbers to 200 cases. Of this number not more than five failed to continue the treatment until results could be estimated, and of the remainder, but three had failed to obtain relief, and there were no deaths. His methods, except in unimportant minor details, were derived directly from Apostoli.

DR. G. BETTON MASSEY spoke particularly of the good effects of electricity in chronic inflammation of the uterus and of the endometrium. Having referred to several cases in illustration, he remarked that in simple endometritis or uterine catarrh, galvanic currents locally applied are practically infallible; so that he has never seen a case resist them. Out of twenty-six cases of fibroid tumor in which he had employed electrical treatment, two were cured anatomically and symptomatically, seven were cured symptomatically and anatomically reduced, eleven were greatly improved, four were slightly improved, one remained unchanged, and one died. He said he could not agree with Dr. Mundé in regard to the milliampère metre. In regard to the use of electricity in pyosalpinx, he had met with one instance in which the treatment for endometritis to which he had referred had excited a flow of pus.

A communication received from Dr. A. J. C. Skene, of Brooklyn, was then read, in the course of which he said that he had observed that those who had avoided the extremes of praise and condemnation in reference to the electrical treatment of fibromata were gaining in numbers and adding valuable notes to their clinical records. The strongest opponents, he believed, were those who knew least about electro-physics and the therapeutic use of electricity. Perhaps the most important question in the whole discussion, he said, was the relative merits of this and other methods of treatment. The claims of hysterectomy and the removal of the ovaries in cases of fibromata had been urged with great vigor by those strongly addicted to surgery; and by a curious use of the facts, it had been made to appear that surgical treatment had advantages, when such was not really the case. He had hoped to get the records to show that more cases have died from removal of the uterus and ovaries for the cure of fibromata than have died from these growths without treatment of any kind. If such were the facts—and he believed that the records of New York and Brooklyn would show that they were true—surely

surgery did not compare so favorably with electro-therapeutics.

DR. H. J. BOLDT thought that while electricity would not in every instance even alleviate the symptoms, we ought not to perform a radical surgical operation in any case until this had been given a thorough test. As regards pyosalpinx, however, he believed that the patient was cured when the tubes had been cut out by laparotomy, and not till then.

DR. GOELET then said that he had cured at least thirteen cases by galvano-puncture which could not have been otherwise relieved except by laparotomy. That is to say, the patients would otherwise have been mutilated. He thought it only right to try and cure these patients before mutilating them, and he had found that by emptying the tubes and the subsequent use of the current the tubes might be rendered patent. The resolution of the proximal end of the tube, he said, could be secured by galvanism of the endometrium, and he was very glad to learn that in this particular his experience had been confirmed by Dr. Massey in the case which he had related. He did not think that we ought to say that the removal of the tubes was a cure of pyosalpinx. It was a mutilation, and not a cure, and in many cases, indeed, the patient's condition was more embarrassing after the operation than before. He went on to say that many of the failures with electricity which Dr. Mundé stated he had met with were to be attributed to the fact of his having used his currents too weak.

Medical Society of the District of Columbia.

Stated Meeting, June 5, 1889.

DR. CHARLES E. HAGNER, PRESIDENT, IN THE CHAIR.

DR. J. M. TONER entertained the Society with a description of the topography of Johnstown, showing that escape was impossible during the recent flood. Several of his relatives and his two instructors in medicine had been lost.

DR. D. W. PRENTISS presented *Casts of the Feet from a Scarlet Fever Patient.*

DR. HENDERSON read a paper on

CEREBRO-SPINAL MENINGITIS COMPLICATING PREGNANCY.

I was called Friday, March 29, 1889, to see Mrs. E., white, æt. 22 years, married, and found she had been sick for several days. She was seven months advanced in her second pregnancy. On the previous Tuesday she had fatigued herself very much by scrubbing up her room, and had suffered with pain in her head all that afternoon and the next day. On Thursday she had a violent chill, followed by fever, and on Friday, the

day I was called to see her, she had another chill. Her condition when I saw her on Friday afternoon was as follows: She was unable to retain anything on her stomach and was vomiting almost constantly a bitter greenish fluid. Her temperature at the time of my visit was 103° , her pulse 120, and she complained greatly of pain in her head and back. Supposing I had a case of remittent fever to deal with, I ordered a powder of $\frac{3}{8}$ gr. of calomel every two hours, as she had constipated bowels, and gave her a suppository of 5 grs. of quinine every four hours. On visiting her the next morning I found that the vomiting still continued and that her bowels had not moved. She now complained very much of pain in her head and in the back of her neck and said she could not stand it any longer. I gave her a hypodermatic injection of $\frac{1}{4}$ gr. of morphia, and no relief following I repeated the injection in half an hour. I ordered large enemata of soap and water to open the bowels, and said I would see her again in the evening. When I called I found that her bowels had been freely moved by the enemata and the vomiting had ceased, but she had had no sleep and still complained of pain in her head and neck, and also of an inability to move her head, which was now thrown backwards. Her temperature was at this time 104° and her pulse 130. I then recognized the true nature of the disease I had to contend with. The calomel powders and the suppositories of quinine were discontinued and she was ordered bromide of potash and chloral every two hours, and cold applications were applied to her head. When I visited her Sunday morning I found her much worse. Her temperature was 106° , pulse 140, and her delirium, which had been only occasional previous to this date, was now constant, and it was very difficult to get her to take either medicine or nourishment, as she experienced great difficulty in swallowing. Her body as well as her head (which was stiff from the rigidity of the muscles), was bent backwards to a marked degree. Her mouth and nose were covered with a herpetic eruption, and her eyes were suffused and inflamed. The movements of the fetus could be distinctly felt, and the advisability of inducing premature labor was considered. I ordered 5 grains of antipyrin every two hours until perspiration was noticeable. After taking one of the antipyrin capsules she went to sleep, and in a few minutes was seized with what her attendants called a convulsion, and I was hastily summoned. I found her in a state of wild delirium, and her head was constantly moving from side to side. Her delirium assumed a strong phase. She was incessantly counting from one to one hundred, and then back again to one, and the same thing over and over again. The convulsion, if she had one, had passed off. Her breathing was rapid and her temperature was still 106° . The family having requested a consultation, Dr.

J. F. R. Appleby was called in to the case. He agreed with me as to the nature of the disease after having satisfied himself it was not a case of uræmic poisoning, by drawing off the urine and examining it with the heat test, and finding no albumen present.

At the suggestion of Dr. Appleby a large enema of a quart of ice water was used with the hope of reducing the temperature. After the first enema her temperature was taken and found to be 104° . Another was now used with the result of the temperature falling to 102° . She then seemed to be more quiet and appeared more intelligent, and the bromide and chloral were continued with the result of her having several hours sleep. For the next few days her condition remained nearly the same, except that her temperature did not rise above 103° . It was almost impossible to give her food or medicine by the mouth because of her difficulty in swallowing, so nourishment consisted of whiskey and milk and of beef tea was given her, enemata, and the medicine in small and often repeated doses by the mouth. A large blister was applied to the back of her head and neck. On Wednesday she was unconscious but at times seemed to have rational moments, and it was then noticed that she had contractions of the uterus, and making an examination I found she was in labor, and that afternoon she was delivered of a seven months' fetus which was living.

The mother was entirely unconscious of its birth and remained so afterwards. Her pulse continued to grow more rapid and feeble, purpuric spots appeared on her limbs, and three days after the birth of the child, and on the tenth day of her illness she sank into a state of coma and died. The baby lived for ten days and then died from congenital debility. It would be an interesting subject to find out if possible the cause of this unusual disease in this patient. She was of a nervous disposition and had always suffered with insomnia and was very delicate. Her surroundings were very unhygienic, and her room had an odor about it like that of a cellar, and was very damp. I mention this as a possible predisposing cause. No post mortem was allowed, so I am unable to report the pathological conditions that would have been found.

DR. GEO. L. MAGRUDER reported two cases:

1. *A Turkey Quill Removed from the Urethra of a Boy.*
2. *A Hair-pin Removed from the Bladder of a Girl.*

DR. THOMAS N. McLAUGHLIN read a paper on

THE THERAPEUTIC EFFECT OF SULPHIDE OF ARSENIC IN DISEASES OF THE SKIN.

This paper is a preliminary report of some investigations which I have been conducting for the purpose of ascertaining the therapeutic effects

of sulphide of arsenic. My attention was attracted to this drug some time ago, and as I desired to obtain a preparation of arsenic which would be better tolerated by some of my cases, I was induced to give this preparation a trial. The sulphide of arsenic is used principally in the manufacture of fire-works, and for medicinal purposes has been seldom employed. The results which I have thus far obtained fully warrant me in calling your attention to the good effect which has followed the use of this drug.

Hurtz informs us that (Realgar) arsenic disulphide, As_2S_3 , occurs in nature in the form of transparent red crystals, which belong to the type of the oblique rhombic prism. It is obtained as a red mass having a conchoidal fracture by melting 75 parts of arsenic with 32 parts of sulphur. It is fusible and may be crystalized by slow cooling. When strongly heated in closed vessels it boils and distils without alteration, but when heated in the air it burns into arsenious and sulphurous oxide. Three compounds of sulphur and arsenic are known: Arsenic disulphide, As_2S_3 , or Realgar; arsenic trisulphide, or orpiment, As_2S_3 ; and arsenic pentasulphide, As_2S_5 . It is to the first of these preparations that I shall call your attention.

Since I was unable to obtain any but the crude drug in this city I ordered from Schieffelin & Co., of New York, 1,000 granules at a time, each containing $\frac{1}{100}$ gr., and prescribed them in the following cases:

The first case, one of psoriasis. This patient had been under the care of some of the most distinguished men in this country. The various preparations of arsenic usually prescribed in the treatment of such cases had all been employed at various times during the twenty years which this patient has suffered with this disease. He has always been compelled, after a very short time, to stop the arsenic on account of the irritation which it invariably produced. He has never been able, therefore, to continue any of the arsenical preparations on this account. Every form of treatment has been employed in this case. I placed this patient upon one granule three times a day, and after four days increased the number to two granules three times a day, and in this way the number has been increased until he is taking eight granules three times a day. When I began to employ this drug the patient suffered with an eruption over his arms, back, head and forehead, his hands were covered with fissures, which would bleed whenever the fingers were extended, the tissue upon palmar surfaces frightfully indurated, the nails black and roughened.

His hands have greatly improved, his nails have nearly assumed their natural appearance, the fissures have entirely healed, and the face at the present time is practically well. One month after prescribing these granules my supply was

exhausted and the patient was compelled to do without them for one week, and during this period the eruption began to extend and the case lost nearly all the good effect which had been produced by the previous treatment. When he again began to use the granules the eruption, after a few days, began to show the effect of the treatment. The same local treatment has been continued all the time. This patient is in a better condition to-day than he has been at any time since the disease first appeared. There has not been the slightest irritation produced by this drug. His general health has improved, and he is now hopeful that he has obtained a remedy which may perhaps exert a controlling influence, if not a curative effect, in his case.

The second case of psoriasis had existed for six years. He has been treated by some noted specialists in this section of the country, and has not been benefited to any extent. This patient, a physician, is covered with an eruption from his head to his feet. He has never been able to take any of the arsenical preparations for a longer period than a week without serious gastric and intestinal irritation being produced. He has employed all forms of local treatment. When he called to see me he was disheartened, said that he had been trying the different forms of treatment during the past six years, and he had not observed the slightest improvement—the eruption appeared to be extending. I prescribed the granules as in the former case. He has not employed any local treatment to certain portions of the body, as I desired to see what the internal treatment alone would produce. He has been under treatment for eleven weeks, is at present taking eight granules three times a day, and the eruption is fading very rapidly. There has not been the slightest stomach or intestinal irritation. Large sections which were covered with the eruption are entirely clean, but show where the eruption has existed.

I have prescribed the granules in cases of acne and furuncles, where I have been in the habit of giving sulphide of calcium, and the results have been more satisfactory from the arsenic than from the latter.

In eczema I have also obtained satisfactory results. I have employed this drug in a large number of cases, and I have not in a single instance observed the slightest irritation or contra-indication to its use. These cases have all been of a very chronic character, and I have been careful to give it a severe and thorough test. I have found, during the short period which I have employed this drug, that the combined action of arsenic and sulphur, the latter proving one of the most serviceable drugs in the treatment of skin diseases, is far superior to the single action of either of these drugs.

The patient is entirely unaware that arsenic is

being administered, and this in itself is quite a consideration. The dose can also be conveniently increased or diminished, as the case requires, and finally entire absence of any irritation of the stomach or intestines thus far having been produced.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

The Water of the Seine as a Causative of Typhoid Fever in Paris—Prof. Verneuil on the Immediate and Remote Results of Operations practiced for Local Tuberculosis—Extirpation of the Larynx—Codeine to obtain Anæsthesia—Dr. Ricord's Will.

It has often been asked whether the ravages made by typhoid fever among the Parisian population are not attributable to the water of the Seine which they are sometimes condemned to drink. In a report on this question, addressed to the Prefect of Police, the Council of Hygiene and of Public Salubrity pronounced its opinion in the affirmative. After having established that potable water is, in large cities the vehicle of typhoid fever, and that the distribution of water non-contaminated diminishes the number of cases of this malady in a proportion hardly credible. The reporter, Dr. Auguste Ollivier, arrived at this conclusion that as far as the water supply is concerned the sanitary condition of Paris is most unsatisfactory. He established that the mortality by typhoid fever rises or diminishes in a direct ratio with the consumption more or less great of the Seine water. In 1888, for example, the minimum number of cases of fever occurred in the month of March, it remained stationary in May and June. From the 9th of June, 300,000 persons drank the Seine water, the mortality rose from 50 to 81. From the 20th of June, the supply of the Seine water was stopped, and the mortality fell again, in August, to 52. In 1889 the distribution of the Seine water commenced on the 25th of May and it has continued. The number of deaths rose from 52 to 115. This proportion has been maintained, as the distribution of the Seine water was continued. There were 110 deaths in July, 117 in August, and 53 during the first half of September. To remedy this deplorable state of things, the Council of Hygiene demands that the supply of pure water should be considerably augmented, by the acquisition of new springs, recognizing, however, the numerous obstacles which are opposed to the realization of this measure. The reporter proposes as an expedient, in anticipation of water being brought to Paris from new springs, that a strict supervision of the drinking water collected in the reservoirs should be carried out, and care

should be taken that this water should serve for nothing else than alimentation and should be suppressed for industrial purposes. In order to carry out this object, a double canalization should be established, with one cock much smaller than the other for spring water, while the second be reserved for the Seine water for washing purposes.

One of the most important questions brought before the recent Congress of Surgery had for its author Professor Verneuil, who treated of the immediate and remote results of operations practiced for local tuberculosis. Whilst acknowledging the immediate benefits of the operation, the eminent surgeon of the Pitié Hospital does not admit that it is always inoffensive. As to the remote results, Dr. Verneuil thinks that most frequently they are unfavorable. He remarked that one never meets in the hospital individuals that had been amputated since 10 years for a tuberculous lesion, when one is led to conclude that in ten years all the amputated tuberculous subjects are dead. The greater number of the members of the Congress were agreed in considering the operations as useful in tuberculous subjects as they are in other individuals, they did not think that they were more dangerous in the former and they expressed a doubt as to the influence of phthisis on evolution of wounds. They were, however, reserved as to the remote results of the operations.

The surgical treatment of peritonitis was considered a modern triumph, the subject gave rise to numerous important communications.

Dr. Cemons, of Bordeaux, presented to the members of the Congress a person on whom he had performed the operation of extirpation of the larynx, about 3 years ago, and who is none the worse for the operation. Since the operation, the man has resumed his occupation and breathes with the aid of a canula.

The employment of cocaine to obtain anæsthesia, or, better, local analgesia, had furnished Dr. Reclus the subject of practical considerations. He stated that notwithstanding his repeated communications he was sorry to find that cocaine had not entered into current practice; it was reproached as being inefficacious and dangerous. He had practiced upwards of 700 injections of cocaine with the view of producing analgesia, on which he made the following reflections: Intradermic injections alone are efficacious, cutaneous paintings have no effect, paintings of the mucous membranes alone may be utilized exceptionally for certain slight operations. Cocainized injections in hydrocele and old hydrarthrosis have given the best results. Interstitial injections alone have a veritable value in the operations on the integuments, but precaution should be taken to push the injection into the thickness of the skin, and not into the subcutaneous cellular tissue. If the soft parts, through which the needle

should pass, are very thick, it would be advisable to practice several superposed injections. In these conditions analgesia is always obtained, and these injections are not, as has been said, inefficacious in inflamed tissues. As regards the duration of the effect obtained by these interstitial injections thus practiced, the author has seen these effects continue for three-quarters of an hour and even one hour; he had effected radical cures without any pain. The bones do not seem to be susceptible of this calming action. In ano-rectal affections and in the painful operations that they necessitate the use of interior tampons imbibed in a 2 per cent. solution and a series of interstitial injections ensure a complete analgesia to such a degree that the dilatation of even the rectum becomes possible without pain. As to the dangers of which cocaine is accused, the author affirms that he had practiced 700 operations without any accident. Very complete bibliographical researches have revealed only four deaths, and in these cases considerable doses of cocaine were injected, namely, 75 centigrams, 1 gr. 20, 1 gr. 25, and 1 gr. 25. Below 75 centigrams there have never been any grave accidents. Certain accidents, however, do sometimes occur, such as pallor of the face, loquacity, tendency to syncope; but with ordinary doses, such as 20 centigrams at most, accidents are very rare. In short, from 10 to 12 centigrams, or 5 Pravaz's syringefuls of the solution, most commonly suffice. To sum up, the author considers cocaine an excellent substance, faithful and efficacious; it is sufficient to handle it with precaution, as is necessary with all the other alkaloids at the disposal of the medical man.

By his will the late Dr. Ricord has left, among other legacies, 10,000 francs to the Academy of Medicine for the foundation of a biennial prize, 5,000 francs to the Société de Chirurgie for a similar purpose, and 10,000 francs to the Association Générale des Médecins de France. To the Midi Hospital he has bequeathed his splendid library, in memory of his twenty-nine years' service as surgeon and teacher in that hospital, to which he owed his reputation and his wealth. It is proposed to perpetuate his name in a similarly appropriate manner in connection with the scene of his scientific labors and triumphs by calling the Hôpital du Midi the Hôpital Ricord.

Professor Richet has resigned his position as surgeon to the Hôtel Dieu on the ground of old age and infirmity.

A. B.

ASSOCIATION OF AMERICAN ANATOMISTS.—The second meeting of the Association of American Anatomists will take place in the Biological Department of the University of Pennsylvania, December 26, 27 and 28. The profession is cordially invited to attend the meetings.

BOOK REVIEWS.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES. Edited by CHARLES E. SAJOUS, M.D., and Seventy Associate Editors, assisted by over two-hundred Corresponding Editors, Collaborators and Correspondents. Illustrated with Chromo-Lithographs, Engravings and Maps. Five Volumes. Philadelphia, New York and London: F. A. Davis, 1889.

We venture to say that all who saw the Annual as it appeared in 1888 were on the lookout for its reappearance this year; but there are many whose knowledge of this magnificent undertaking will date with this present issue, and to those a mere examination of the work will suffice to show that it fills a legitimate place in the evolution of knowledge, for it does what no single individual is capable of doing. It aims to preserve the useful and discard the useless in all the multiple branches of medical science. Its function is selective, developed of necessity, by the superabundant medical literature of the day. We feel that a work of this class will grow in usefulness with each succeeding annual issue.

These volumes make readily available to the busy practitioner the best fruits of medical progress for the year, selected by able editors from the current literature of the world; such a work cannot be overlooked by anyone who would keep abreast of the times. Even the knowledge picked up by the habitual journal reader, who runs over six or eight periodicals weekly, cannot be compared with what may be acquired with these volumes which represent the most useful, promising and novel developments in the whole field of medical science that have materialized during a year.

The contents of these five volumes consists of matter which has been taken largely from the current numbers of seven hundred and fifty-six different journals, to which might be added books, theses, monographs, etc., numbering two hundred and thirty-four. These are referred to in the text by date and number, thus giving an unusually wide range of bibliographic material.

No pains have been spared to make the indices as complete and accurate as possible. The weights and measures both Metric and Apothecaries, Farenheit and Centigrade, appear side by side.

Deluged with such a mass of periodical literature as the references in this work show us to be, it would seem almost impossible, without the aid of some such shifting process, to know where we stand in regard to many disputed questions, or what the value of this or that alleged new discovery is. Now every intelligent man wants to hear the evidence, weigh the authority and judge for himself. It would appear that the editors

have acted as impartial collectors of evidence and submit the result of their labor to the judgment of the reader.

With so much that is worthy of notice incorporated in one work, and each department written up with a minuteness and thoroughness appreciated particularly by the specialist, it would avail nothing to cite particular instances of progress. Let it be sufficient to say, however, that while formerly there was a possible excuse for not having the latest information on matters pertaining to the medical sciences, there can no longer be such an excuse while the *Annual* is published.

THE CURE OF CROOKED AND OTHERWISE DEFORMED NOSES. By JOHN B. ROBERTS, A.M., M.D., Professor of Anatomy and Surgery in the Philadelphia Polyclinic, etc. Philadelphia: P. Blakiston, Son & Co. 1889. Pp. 24.

This is a reprint in book form of a paper read before the Philadelphia County Medical Society, and contains some useful hints on the subject of rhinoplasty.

TRANSACTIONS OF THE MICHIGAN STATE MEDICAL SOCIETY. Twenty-fourth annual meeting, held in Kalamazoo, June 9 and 10, 1889; pp. 390.

The work of the Michigan State Society for 1889, as indicated by its published transactions, is deserving of very high praise. Thirty-five papers, covering a wide range of topics, were read at the annual meeting. Although this is not a large number, it is but just to say that the material is of a high order of excellence. Most of the papers are accompanied by the discussions which followed their reading. In point of quality of work done, this Society deserves to rank among the foremost of the State Societies.

ALCOHOL INSIDE OUT. By ELISHA CHENERY, M.D., Member of the American Medical Association, Fellow of the Massachusetts Medical Society, etc. Philadelphia: Records, McMullin & Co. 1889. Cloth, price, \$1.50; pp. 340.

Dr. Chenery has considered his subject from the standpoints of chemistry, physiology, pathology and experience, and has presented it in very able form. It is not addressed particularly to the medical profession, but "to the millions." The topics considered are the following: Alcohol, what and whence is it? Alcohol, its way through the system, with observations by the way; Alcohol as a poison, a food, a medicine. In its claims as a food and medicine alcohol receives pretty rough treatment from the writer, who removed his gloves for this purpose. He does not regard it as in any sense a food, or even an "accessory food," by any just interpretation. As a medicine some of its claims to applicability in external and

internal medication are admitted; but inasmuch as all its uses are impaired by serious drawbacks, and since other remedies are of equal or superior merit, the writer feels that it may as well be discarded from the *materia medica*. "On the whole," he says, "alcohol is foreign to the human body, both in nature and in action—an enemy. Alcohol will not destroy itself, nor can its few virtues redeem it in the face of its exceeding hostility to the race. Banishment is its due."

Throughout the entire work the author's citations are extremely numerous. Particular attention is due to the excellent chapter on the adulteration of the various vinous and spirituous liquors in use.

A TREATISE ON THE SCIENCE AND PRACTICE OF MIDWIFERY. By W. S. PLAYFAIR, M.D., LL.D., F.R.C.P., Physician-Accoucheur to H. I. and R. H. the Duchess of Edinburgh, Professor of Obstetric Medicine in King's College, Consulting Physician to the General Lying-in Hospital, London, etc. Fifth American, from the seventh English edition, with notes and additions by ROBERT P. HARRIS, M.D. With five plates and 207 illustrations. Philadelphia: Lea Brothers & Co. 1889. Pp. xxxi, 670. Price, leather, \$5.00.

But little can be said that will tend to increase the cordiality of the reception that is assured in advance for such an old and excellent friend as Playfair's *Obstetrics*, which stands in the first rank of English works on this subject. The present edition follows closely upon the sixth, and accordingly the author has not deemed it necessary to make any very extensive additions to his earlier editions. We regret, nevertheless, that he has not seen fit to enlarge upon the general subject of child-bed fever, the bacteriological aspect of which is decidedly slighted, while the relation of puerperal cellulitis and peritonitis to septic infection is scarcely indicated, these two manifestations of disease being treated almost as separate entities independent of any connection with infectious processes. The footprints of the American editor appear in greatest abundance upon the pages devoted to a consideration of the various modifications of the Cæsarean section, upon which questions Dr. Harris has been afforded abundant opportunity to improve upon the English edition, an opportunity of which he has availed himself with commendable judgment.

THE STORY OF THE BACTERIA AND THEIR RELATION TO HEALTH AND DISEASE. By T. MITCHELL PRUDDEN, M.D. Pp. 143. New York and London: G. P. Putnam's Sons. 1889.

Every one who has read Prudden's "*Manual of Practical Normal Histology*" is well aware what a large amount of useful information this author

is able to condense in small space. In the present volume he has treated an essentially scientific subject in a popular manner with the avowed purpose of suiting it to the understanding of non-professional readers. This has been done in a most satisfactory and praiseworthy manner. Nothing can be more fascinating than the unfolding of the mysteries of nature before the eyes of the eager searcher for knowledge, and in this small work the author reveals a chapter of nature's secrets which has only been brought to light in very recent years, and of which the general public has as yet extremely little information. It is written in a very simple and untechnical style, but containing as it does much information regarding the bearing of recent investigations, as well as a brief survey of the general scope of the subject, it will be found to possess no small value to medical readers.

SAUNDERS' QUESTION COMPENDS NO. 7. ESSENTIALS OF MATERIA MEDICA, THERAPEUTICS, AND PRESCRIPTION WRITING. Arranged in the Form of Questions and Answers, prepared especially for Students of Medicine. By HENRY MORRIS, M.D., Late Demonstrator, Jefferson Medical College; Co-editor Biddle's *Materia Medica*; Visiting Physician to St. Joseph's Hospital, etc. Pp. xvi, 250. Price, cloth, \$1. Philadelphia: W. B. Saunders. 1889.

We believe that quiz compends, when of as high an order of merit as this one, offer substantial advantages to students in facilitating the process of memorizing a vast number of facts and figures. We can hardly agree with the author that this volume is valuable in placing before the student the *principles* of materia medica and therapeutics, but are entirely willing to concede the value of the method employed in setting forth the practical *facts* based upon those principles.

Most of the new remedies receive a proportionate share of attention, and not students alone, but busy practitioners as well may profit by such a survey of the whole field of materia medica as is afforded by the compact arrangement of this convenient work.

ASSOCIATION NEWS.

American Medical Association—Forty-first Annual Meeting.

Section of Obstetrics and Diseases of Women.

The officers of the Section of Obstetrics and Diseases of Women respectfully request those who desire to read papers in that Section at the meeting of the American Medical Association to be held in Nashville, Tenn., May 19-22, to com-

municate the titles thereof to either of the undersigned not later than January 15, 1890.

WILLIAM WARREN POTTER, Chairman,
284 Franklin St., Buffalo, N. Y.
JOSEPH HOFFMAN, Secretary,
126 W. Diamond St., Philadelphia, Pa.

MISCELLANY.

LETTERS RECEIVED.

Dr. Grebenschikoff, St. Petersburg, Russia; Dr. D. Duckett, Forest, Ill.; Dr. J. P. Deahofe, Potsdam, O.; Dr. E. A. Christian, Pontiac, Mich.; J. H. Bates, Dr. S. S. Purple, New York; Dr. Talbot Jones, St. Paul, Minn.; Dr. Wm. J. Gibson, Saranac Lake, N. Y.; Dr. C. J. Saunders, Clare, Ia.; Dr. Samuel B. Rowe, Rolla, Mo.; W. H. Shieffelin & Co., New York; Dr. Jno. S. Coleman, Augusta, Ga.; Thomas Leeming & Co., New York; Dr. John C. Roe, Rochester, N. Y.; Dr. Valentine Mott, New York; Republican Printing Co., Cedar Rapids, Ia.; R. A. Robinson & Co., Louisville, Ky.; W. P. Cleary, Roseberry Nutrolactis Co., New York; Dr. Harry M. Smith, Leavenworth, Kan.; F. F. Pitman, Newport, R. I.; Lambert Pharmacal Co., St. Louis, Mo.; Dr. F. S. Bascom, Salt Lake City, Utah; Lehn & Fink, New York; Dr. William Mackie, Milwaukee, Wis.; Scott & Bowne, New York; Codman & Shurtleff, Boston; Dr. Wm. B. Atkinson, Philadelphia; Dr. H. S. Johnson, Lawrenceville, N. J.; John E. Ruebsam, Washington; Health Restorative Co., New York; Dr. W. S. Stewart, Philadelphia; S. H. Parvin's Sons, Cincinnati, O.; Dr. H. W. Williams, Boston; Surgeon-General U. S. Army, Washington; Battle & Co., St. Louis, Mo.; Geo. F. Lasher, Philadelphia; Dr. C. F. Falley, Brattville, Ky.; E. B. Wilson, Collierville, Tenn.; Dr. U. M. L. Rickards, Philadelphia; Lutz & Movius, John O. Meade, King's Medical Advertising Agency, New York; W. Muset, Brooklyn, N. Y.; John Wanamaker, Philadelphia; Dr. C. E. Spencer, Fort Gratiot, Mich.; B. Westermann & Co., New York; Dr. F. B. Lovell, Daykin, Neb.; I. Haldenstein, The Maltine Mfg. Co., New York; Dr. Jos. L. Bauer, St. Louis, Mo.; Dr. James French, Cincinnati, O.; Félix Alcan, Paris, France; Frank S. Billings & Co., Chicago; Dr. Max Thorner, Cincinnati, O.; Dr. L. D. Frum, Scardis, W. Va.; Dr. W. J. Coppernall, South Butler, N. Y.; Dr. Joseph Jones, New Orleans, La.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from December 7, 1889, to December 13, 1889.

Major John D. Hall, Surgeon, is granted leave of absence for ten days, to take effect upon being relieved from duty at Ft. Niagara, N. Y. Par. 11, S. O. 285, A. G. O., Washington, December 7, 1889.

By direction of the Secretary of War, Capt. Edward C. Carter, Asst. Surgeon, will be relieved from duty at Willett's Point, N. Y., upon the arrival at that station of Major Clarence Ewen, Surgeon, and will then proceed to Ft. Walla Walla, Wash., and report in person to the commanding officer of that post for duty, reporting also by letter to the Commanding General, Dept. of the Columbia.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending December 14, 1889.

Surgeon J. W. Ross, detached from Navy Yard, Pensacola, Fla., and placed on waiting orders.

Asst. Surgeon I. W. Kite, detached from Naval Hospital, Philadelphia, and to Navy Yard, Pensacola, Fla.

Surgeon B. F. Rogers, ordered to special duty at Norfolk, Va.

P. A. Surgeon Philip Leach, ordered to duty at Naval Academy, Annapolis, Md.

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ORIGINAL ARTICLES.

THE NECESSITY OF SANITARY SUPERVISION OF SCHOOLS.

Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY GEORGE H ROHE, M.D.,

PROFESSOR OF OBSTETRICS AND HYGIENE IN THE COLLEGE OF PHYSICIANS AND SURGEONS OF BALTIMORE.

It is well known to physicians and others who have devoted attention to the subject, that many of the most disabling, painful and destructive maladies owe their origin or intensification to certain injurious influences of school life. Inasmuch as a good system of intellectual training should endeavor to avoid injury to bodily health, it becomes worth while to inquire what these injurious influences are, and whether they can be avoided, mitigated or removed.

Authorities in school hygiene assert that bad construction of school-houses, defective lighting and ventilation, inefficient removal of the bodily excretions or of the pernicious gases generated by their decomposition, improper school furniture and furnishings, such as seats, desks, blackboards, books, etc., deficient facilities for drying wet clothing, want of elementary knowledge of hygiene on the part of the teacher, over-study, carelessness on the part of parents or attending physicians, and many other causes needless to specify, are responsible for a large number of serious diseases, among which the following are the more important:

1. Nearsightedness.
2. Pulmonary consumption.
3. Spinal deformities.
4. Nervous and digestive disorders.
5. Contagious diseases.

I. NEARSIGHTEDNESS.

It needs no argument to show that nearsightedness is increasing. The large proportion of young persons compelled to wear glasses in order to use their visual organs to the best advantage testifies to this with sufficient emphasis. There is abundant evidence also to prove that this increase is due to the pernicious influences of certain unhygienic conditions to which children are sub-

jected in the schools. For example: It has been shown, basing the conclusions upon the examination of nearly 100,000 school children in Germany and elsewhere, that in village schools less than 1 per cent. of the pupils are nearsighted; in the elementary schools in cities, from 2 to 3 per cent., and in the grammar and high schools, from 4 per cent. in the lowest classes to over 50 per cent. in the highest. The percentage in some high schools and colleges reached a much higher figure, being 75 per cent. in one school in Vienna. Drs. Loring and Derby found a similar progressive increase in nearsightedness in the public schools of New York, although not to as great an extent as European observers have found. But it is not merely the proportion of nearsighted pupils that increases in the higher classes; the *degree* of the abnormality increases likewise, so that a pupil entering school with healthy eyes and normal vision will at the end of two years have a minor degree of nearsight, which in two or three years more will increase to a much higher degree, thus proving conclusively that the exigencies of school life determine the causation of the affection.

But it may be objected that this visual defect is a necessary accompaniment of school work, and that it cannot be avoided without entirely giving up educating children, or reducing their education to a minimum. To disprove this objection certain evidence is on record which could not be more apropos if the experiment had been made purposely. In the city of Coburg 2,323 children were examined in 1874, and showed an average of 21 per cent. of nearsighted pupils. The same number examined in 1877 showed an average of only 15 per cent. This marked reduction was accomplished by a better arrangement of seats and by better lighting in the schools. In some of the new schools erected between 1874 and 1877, in which hygienic principles were applied, the reduction in the proportion of nearsighted pupils was even greater than is shown by the average.

As the tendency to nearsightedness is hereditary and progressive, the time must come when the great majority of educated people will be nearsighted, unless measures are adopted to check its increase. The principal causes of nearsightedness in schools are:

1. Improper construction of seats and desks. A line dropped from the near edge of the desk should strike the front edge of the seat; if there is an interspace between the line and the seat the pupil cannot sit erect while writing or reading from a book resting on the desk. He is obliged to lean over forward, causing congestion of the eyes and consequent succeeding visual anomalies.

2. Bad lighting. An insufficient quantity of light or an improper position of the pupil with reference to the source of light. In a properly arranged schoolroom the light should come from the left side and a little above and behind the pupil. Daylight, which should be the only sort of light used in schoolrooms, should be diffused, and not enter the room as direct solar rays. This requires that the side of the room from which the light enters should face toward the north, in order to avoid direct sunlight. The proportion of clear window space to floor space should be as 1 to 5.

3. The distance of the objects to be seen, for example maps and blackboards, and their position with reference to the light. Letters and figures of the size usually made on blackboards can not be seen with normal vision at a greater distance than 30 feet. Hence, if the blackboard is placed at a greater distance, or the writing on the board is indistinct, the attempts to accommodate the eye to the greater distance will cause strain or other visual troubles.

4. Type, paper and printing of school books. No type of a smaller size than that known to printers as "long primer," leaded, should be permitted in any text-book. The paper should be clean and not translucent. Cohn, the highest authority upon this subject in the world, says that the school authorities should place every school book upon the *Index prohibitorum* in which smaller type is used than long primer, a less interval between lines than $\frac{1}{16}$ inch, a longer line than $4\frac{1}{2}$ inches, and more than 60 letters to a line. He also says, with reference to the custom of printing matters of less importance in small type, while other portions of the book are printed in larger type: "What is unimportant should not be printed at all; but what is important should be printed in type of proper size."

5. Length of time of study. Lessons should be frequently varied, and care taken that two writing lessons should not immediately follow each other.

2. PULMONARY CONSUMPTION.

Of the 8,936 deaths from all causes in Baltimore during the year 1888, 1,151, or almost exactly one-eighth, were from consumption. It is notorious that in a large proportion of cases the seeds of this fatal disease are implanted in the youthful system during school life. Now, inasmuch as it is undoubted that badly ventilated and lighted apartments, and an improper position

of the body, interfering with full expansion of the chest and free circulation, are strongly predisposing causes of consumption, it is important that the utmost attention should be paid to the removal of such conditions.

3. SPINAL DEFORMITY.

Five-sixths of the cases of spinal disease and deformity begin during the years of school life. The affection is over ten times as frequent in girls as it is in boys. Improperly constructed seats and an almost necessarily consequent bad posture of the body are responsible for the greater number of these cases. Defective lighting has often a decided influence in producing this disease by compelling the pupil to assume an improper position.

4. NERVOUS AND DIGESTIVE DERANGEMENTS.

These disorders, which frequently persist through life, rendering the individual a chronic invalid, are often results of defective ventilation, over-heating, or excessive mental strain. The influence of excessive brain stuffing in producing headaches and other nervous affections in school children has lately been called in question by teachers and others, who object to the pernicious activity of sanitarians in endeavoring to remove the bad conditions incident to school life. The results of an investigation by Prof. Bystroff, of St. Petersburg, show, however, that the influence of the customary intellectual *surmenage*, as the French style it, is not exaggerated. This author examined 7,478 boys and girls in the St. Petersburg schools during the last five years, and found headache in 868, that is, in 11.6 per cent. He states that the percentage of headache increases almost in a direct progression with the age of the children, as well as with the number of hours occupied by them for mental labor; thus, while headache occurred in only 5 per cent. of the children aged 8, it attacked from 28 to 40 per cent. of the pupils aged from 14 to 18. The author argues that an essential cause of obstinate headache in school children is the excessive mental strain enforced by the present educational programme, which leaves out of consideration the peculiarities of the child's nature and the elementary principles of scientific hygiene. The overstrain brings about an increased irritability of the brain and consecutive disturbances in the cerebral circulation. In view of these figures the appeal of a recent French writer for "un peu plus des muscles, un peu moins des idées" (a little more muscle, a little less brain) seems justified.

5. CONTAGIOUS DISEASES.

Sanitarians are practically unanimous in the opinion that the schools are frequent sources of the extension of contagious diseases. Small-pox, scarlet fever, diphtheria, mumps, measles and whooping-cough are probably spread as often

through the medium of schools as in any other way. Epidemics of these diseases always increase during the school season, and rapidly diminish when the schools are closed. Suspension of the schools has sometimes brought to an end epidemics of diphtheria which could not be controlled in any other way. The almost unrestricted manner in which children attend school from houses infected by one or other of the diseases mentioned gives the freest possible chance for the spread of these maladies. School boards usually require that all children attending school shall present a certificate of vaccination before being admitted, but it is an open secret that physicians have given such certificates without examining the arms of the children. What guarantee has the Board, what assurance have the parents of the thousands of other children that a child with such an uncertifying certificate may not come from an infected house, and so spread small-pox?

In what manner can the evils mentioned be removed or abated?

First, by securing proper construction, ventilation, heating, lighting and furnishing of school-houses; then by watching over the health of the pupils from the time of their admission to their graduation, correcting habits injurious to health, and preventing, by appropriate measures in conjunction with teachers, parents and the municipal health authorities, the spread of contagious or infectious diseases. This can only be successfully accomplished by the employment of an expert official appointed by the Board of School Commissioners and subject to their authority. I would indicate the scope of action and duties of such an official somewhat as follows:

An official, to be designated as "Sanitary Commissioner" or "Sanitary Supervisor of Schools," shall be appointed, whose duties shall be to examine all plans for new school buildings before construction, all new school-houses before acceptance, and all school buildings now in use, and suggest to the Board such changes as will make them more appropriate in a hygienic point of view. He shall examine all new pupils applying for admission, to determine whether they are vaccinated, vaccinate such as need it, keep a watchful care over the course of instruction, so that no children are over-burdened in their daily tasks, receive due notification, through the teachers or the health department, of any contagious disease among children attending the schools, or occurring in houses whence children are attending school, examine all text-books and give an expert opinion upon paper, type and print, and also upon the contents of such as pretend to give instruction in hygiene, before they are adopted. He shall give instruction, by lectures and otherwise, to teachers upon the principles and practice of school hygiene under such regulations as the

Board may establish, visit every public school-room at least four times in every year, and make such suggestions for sanitary improvement as appear necessary. He shall also test the eyes of all school children as to their vision at least once every year, and keep an accurate record of these tests. He shall report annually, in writing, to the Board of School Commissioners upon the work he has performed during the year. Special reports may be required from him at any time upon questions coming within the purview of his duties, and he shall be at all times prepared to aid the Board with advice and suggestions.

Manifestly such duties as here outlined can be performed only by an educated physician who has given especial attention to hygienic questions both in their general and special applications. It is obvious that political services do not necessarily qualify a man for such duties; hence his appointment should not be contingent upon his political views or activity, but upon his merits as a student of hygiene. It must be likewise manifest that a physician with a large practice, or a popular surgeon, or an obstetrician with a fashionable clientèle, are not necessarily the best qualified for this service; in fact the sanitary supervisor of schools requires knowledge of a special character which the practicing physician rarely possesses, be he never so competent or successful in his own special field.

There is a tendency among the wit-snappers of the press and, I am sorry to say, among the medical profession likewise, to deride school boards for their ignorance of the principles of school hygiene. I am inclined to think this criticism is often unjust to the men who at a sacrifice of their time and comfort assume the important trust of administering the affairs of public education. In my native city, where the School Board is selected by the City Council, I am sure every member of the Board is thoroughly imbued with the responsibilities of his position and anxious to do the best he can to advance the cause of popular education and the interests of the pupils for whom he is responsible. I have found these men anxious to learn in what manner they could more efficiently discharge their duties, and when a plan was suggested to them they eagerly adopted it and asked the city government for power to carry it into effect. I have no doubt that the boards of education in other cities are composed likewise of public-spirited men whose desire to discharge their duties honestly and creditably is above all desire for personal advancement. The plan which the Board of School Commissioners of Baltimore asked leave (which has, unhappily, not yet been granted by the city authorities) to carry into effect is outlined in the following quotation from the report of that body for 1887:

"It is undoubtedly the duty of those in charge of the public schools to do whatever may be

necessary for promoting the health of the pupils, as well as their intellectual development.

"It is unfortunately true that many children are subject to deleterious influences during their school life, which not only impede their progress in school, but often permanently impair their health; and if it is possible to do so, the causes of these results should be prevented or removed. With this view the Board has recently asked authority from the City Council to appoint an officer who shall be a physician and expert in sanitary science, and who shall have general supervision of the sanitary condition of the schools, and whose duties shall be as follows:

"1. To carefully examine all plans submitted for the construction of new school-houses, and suggest such modifications as may be necessary from a sanitary point of view.

"2. To advise with the Commissioners with reference to necessary alterations in school buildings to improve their hygienic condition.

"3. To examine all text-books before adoption, in order that the type, printing or paper injurious to the eyesight of pupils may be avoided in selecting such books.

"4. To satisfy himself, by personal examination if necessary, that all the pupils admitted to the schools have been properly vaccinated or otherwise protected against small-pox.

"5. To take such measures, in connection with the Health Commissioner of the city, as may be necessary to prevent the spread of contagious diseases in or through the medium of the public schools.

"6. To examine annually the eyesight of the children attending the public schools, and to keep an accurate record of such examinations.

"7. To report annually, or as often as may be required by the commissioners, upon the sanitary condition of the schools and of the pupils attending them, and to advise the commissioners upon sanitary questions connected with schools whenever required.

"8. To give instruction, by lecture or otherwise, to the teachers in the schools upon the elementary principles of school hygiene.

"The Committee on Health has earnestly recommended the appointment of a sanitary superintendent for the schools, and believe that great benefit would result to the pupils, if such officer is well qualified for the position and faithfully performs the duties as above prescribed, and the Board requests your favorable consideration of this application."

I am disposed to believe that the reason so little attention is paid to the subject of school hygiene by school authorities generally is owing to the indefinite manner in which the subject is often presented to those bodies. Advocates of sanitary improvement too often seem to think that mere assertion is all sufficient and will carry

conviction. This is a mistake. Facts must be collated and arranged in such a manner that their significance can not be otherwise than in their true relations, and it will then not be difficult usually to convince intelligent public men of their importance.

I trust that the members of the Section of State Medicine are fully imbued with the necessity of the reform in school administration which I have advocated. I am quite sure that the presentation of facts which I have made here was unnecessary to impress its importance upon you; but I would suggest that in any movement to secure the results which must flow from the adoption of these measures, the advocates will so fortify themselves with the facts at command as will enable them to present a case to the public in which the evidence is all relevant and the testimony unimpeachable.

DR. W. L. SCHENCK, of Kansas City, said: Though Dr. Rohé's discussion of his subject has been full and full of valuable information, it cannot be exhausted in twenty minutes. At the National Association of Railway Surgeons held the other day at St. Louis, prominent on the platform was displayed this sentiment: Surgery and Hygiene—the medicine of the twentieth century. Then this will be the Section of the American Medical Association. We sometimes sing:

"Youth is the time to serve the Lord,
The time to receive the rich reward."

It is the time to lay the foundation upon which to erect a superstructure that shall stand and withstand; the time to develop strong and healthy bodies through which mind and soul shall find opportunity to serve God and man.

The author of the paper has very properly emphasized the importance of preventing schools from becoming depots for the reception and distribution of infectious and contagious diseases. They bring together children from all classes and localities, so that if the nidus of contagious disease finds lodgment in the district it may, without proper sanitary inspection and supervision, be carried to every home.

Childhood may or may not be more susceptible to such diseases than adult life, but its virgin soil has not had opportunity of exemption through contact and contract, and certainly some of the zymotic diseases, as scarlet fever, diphtheria and small-pox, are especially fatal in early life. The health interests of every community demands that our schools should have intelligent supervision, and at the first appearance of contagious disease separation and isolation, and always vaccination.

The children of all civilized nations spend a large portion of their time in the schoolroom, and if they escape its mortal perils they carry thence the physical, mental and moral development and habits that shall govern their future lives, hence we cannot too strongly impress the importance of scientific school hygiene.

In America schools are controlled by directors ignorant of sanitation and chiefly anxious about their economic arrangement, and as teachers reflect the sentiments of the directors, the difficulties do not lie so much in sanitary science as in the difficulty of impressing the people with its importance.

Take one of the simplest problems in sanitary science. Pure air is necessary to the oxidation and decarbonization of the blood, and is Nature's antiseptic and disinfectant. By its universal distribution Providence has so emphasized its importance that "a wayfaring man, though a fool, should not err," yet ninety-nine out of one hundred school buildings are without proper arrangement for ventilation, and too often where the architect has made proper provision the ignorance or stupidity of janitor or teacher thwarts his purpose. Some one who comprehends its importance should see that the schoolroom is constantly supplied with pure air, warmed before it is admitted and removed as fast as it is contaminated. Our schools fail alike to protect the health and life of children placed under their care for protection and development, and to teach them the importance and the methods of protection. Every school district is a field ripe for the scientific sanitarian. How shall teachers teach and apply that which they do not understand, and how shall they learn without a teacher? Every academy, normal school and college should have a department of preventive and State medicine, that their pupils may carry thence into the various departments of life the knowledge that shall enable them to protect themselves and the community in which they reside against disease and premature death.

There are many and varied sanitary questions of vital importance to the school, to parents and the State, whose neglect brings disease and death where there should be life, health and growth. Among the more important we might name the location of the school building with reference to air, light and water, soil, drainage and general surroundings, seats, and commodes, school methods, false stimulants to study, overwork, underwork, machine work; all bearing upon the physical and intellectual health and life of the pupil and proper subjects for sanitary inspection and instruction.

There is a time in the history of all civilizations when the belief prevails that physical punishment is the "schoolmaster to bring us to Christ," but as civilization advances we learn that "all his ways are wisdom's ways and all his paths are peace." In the United States, save at the hearthstone and in the schoolroom, the whipping post is abolished, and it only lingers there because cowards can flog unresisting infants with impunity.

In the city of Boston, which we were wont to consider in the forefront of civilization, though

the pupils in the high school, who are old enough to resist, are not flogged, 18,000 corporal punishments were administered last year in the grammar and primary departments of her public schools, and for the past five years the record shows the number of whippings has about equalled the number of pupils. What a commentary on our civilization! The only apology offered is that many of them were wild, which only demonstrates the fact that many of them could have been dispensed with. That they were not excessive is probably due to the fact that the temper of the teacher was under partial control. If any benefit can arise from the use of the rod it should generally be applied to the teacher who uses it. It is the story of the old Scotch minister. When a brother told him he had the sexton go around to wake up those who slept when he preached, the Scotchman replied "An' wad it na' be be better to wake up the minister." The rod is brutal and brutalizing. It debases mentally and morally both teacher and pupil. With every educational method the question must be, does it implant in the mind a desire for knowledge for the sake of knowledge, a desire to do right through love of right? Education on this basis always strengthens, uplifts, enlarges, is always hygienic. The true teacher, filled with the grandeur of his vocation, maketh his pupils "to lie down in green pastures, he leadeth them beside the still waters, he restoreth the soul." The rod is the measure of his incapacity. While we may not know the essence of spirit and are unable to say whether it is an original creation or whether monad, bivalve and simian marked the weary way to its coronation in man, we find it moulding and developing the tenement in which it dwells, and in turn through its agency being moulded and developed into grander proportions. Man is not a sphynx-like mixture of angel and beast, the possibilities of the angel lying in the mortification of the beast. The thought that the spirit is to be brought into subjection by the mortification and flagellation of the body finds no place in scientific hygiene. Aught that injures the casket injures the jewel it contains. The full and harmonious development of the spirit is through the perfect health and growth of the body, "*mens sana in corpore sano.*"

When the motive for spiritual growth is either hope of reward or fear of punishment, the end is attained only when the motive is removed. They dwarf and destroy the desire and capacity for perpetual growth and tend to moral, intellectual and physical disease. There is a wrong method and a wrong motive. Fear cannot develop true heroism, but tends to timidity, sullenness and revenge, and both lead to irritability, nervousness and physical disease. Aught that injures the spirit injures the body in which it dwells,

"For of the soul the body form doth take,
For soul is form and doth the body make."

It is important to the State and to humanity that the schools where the children of the nation are placed for culture and growth should be under the constant supervision of those who understand the laws of life and all that tends to its deterioration.

DR. LINCOLN, of Massachusetts, said he had found the standards of all description vary according to the authority adopted. Even authorities differ, and hence we need the opinions of the best.

Resolutions regarding the formation of a committee to inquire into the advisability of securing such legislation as Dr. Rohé had suggested were introduced by Dr. Lincoln.

Resuming the discussion DR. PINKHAM, Chairman of Sanitary Committee for the schools in Lynn, Mass., said that he had been engaged in such work for several years, and his committee is granted for this purpose \$2,000 per year. He had found deficiency in ventilating and lighting in all the buildings under the supervision of his committee. Reports were made to the State Board of Health and many reforms have been carried out.

DR. BELL, of New York, said that some of the suggestions made had already proved impracticable. Thorough exposure of the evils is the most important way of abolishing an evil. The general sanitary authorities of the cities are getting stronger than the school boards, and properly so. In general the boards of education have opposed the necessary hygienic regulations.

DR. GIBON, U. S. N., said he had been a school inspector and had always found schools unhygienic; and furthermore, he had always been opposed in his work by the school boards. He supported Dr. Lincoln's resolutions.

The resolutions were then adopted and Drs. Lincoln, Rohé, Reed, Schenck, and Pinkham were constituted a committee to take the matter in hand.

THE HUMORAL PATHOLOGY, OR TOXIC AGENTS IN THE BLOOD AS A CAUSE OF DISEASES OF THE NERVOUS SYSTEM.

Delivered in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY M. R. CRAIN, M.D.,
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It is unnecessary for me to go into the history of the humoral pathology, as held by physicians for so many centuries, with their crude and erroneous ideas, as well as the opposite doctrine which followed, *i. e.*, that all morbid processes originated in the solids.

The latter as an exclusive theory is equally absurd. Thos. Watson, after speaking of the two above named theories, says: "The pendulum of

opinion swung at once, as is usual, into the opposite extreme of error. It is now settling in our time at the juster medium. Reviewing, under new and more faithful evidence, the humored doctrine again asserts its rightful, but modified claims upon our acceptance. That its old extravagances still find favor among the ignorant, and are commonly adopted by the quack, are circumstances which illustrate the fact that the mischievous influence of unsound theories survived the duration of the theories themselves. The scientific physician of the present day can only wonder how solidism or exclusive humoralism should ever have found advocates." Although the above was uttered by Watson more than forty years ago, few since that time have taken as candid view of the subject as he did, and the tendency has been towards solidism. The scientific mind of the present is very skeptical and accepts no vague theories. Everything must be proven, in fact must be perceived by the senses.

The microscope gave a great impulse to solidism by enabling us to discover lesions that could not be seen with the unaided eye, and to study the minute structure of coarser specimens. While this is true in general medicine, it has been carried to a much greater extent in neurology. The neurologists of the present and near past have been striving to find some change in the structure of the nervous tissue to account for every perverted function of the nervous system. Although I do not underrate the importance of studying the minute structure of pathological specimens in diseases of the nervous system, it is fully as important to try and ferret out the cause of the lesion, also, in cases where there is no change in structure, to find the cause of the perverted function.

In many cases the exciting cause of the change in structure and, where there is no change in structure, the perverted function, is some unnatural or toxic condition of the blood. Of course I do not wish to convey the impression that it is a new idea that organic disease or perverted function of the nervous system can be caused by a toxic condition of the blood. Far from it, for we are all familiar with the effects of alcohol or an excess of urea in the blood on the nervous system. We live in a period in which great strides are being made in preventive medicine. Although the greatest advance is being made in preventing zymotic diseases, yet good work is being done in other branches.

Infectious diseases are caused by the introduction of germs into the system, but the symptoms of the disease are caused by a chemical poison, *viz.*: a ptomaine which is produced in the body by the microorganism. Many diseases of the nervous system are likewise caused by a toxic agent in the blood; some suddenly, others insidiously, by the tissues being continually bathed with the toxic agent.

My object in writing this essay is to bring the subject before you, that you may be constantly on the alert to detect the toxic agent and to eliminate it, or prevent its further formation or introduction into the system before it shall have produced irreparable damage to the nervous system. In the past few years there has been considerable work done in this direction, although not all from the same standpoint, as our knowledge is still meagre and unsystematized. Brunton, in his volume entitled "Disorders of Digestion," which is made up of miscellaneous papers, treats of the subject of nervous disorders caused by poisons, formed during imperfect digestion, very pleasantly and scientifically. Dr. A. M. Brown has treated the subject of nervous disorders caused by toxic agents produced in the body, viz.: ptomaines, leucomaines, etc.; also does Sir William Aiken, in his little work entitled "The Animal Alkaloids, viz.: the Ptomaines, Leucomaines and Extractives in their Pathological Relations." In 1888 Drs. Vaughan and Novy wrote a work entitled "Ptomaines and Leucomaines," which embraced all of our exact knowledge on these subjects up to that date, including a bibliography of the same.

Dr. Thomas Buzzard, in the Harvarian Lectures for 1885, treats very fully of the toxic agents in the blood producing multiple neuritis, also does M. Allen Starr in the Middleton Goldsmith Lectures for 1887. Fothergill, in his work entitled "Vaso-Renal Change versus Bright's Disease," claims that chronic Bright's disease, instead of being simply a local affection, is a complex pathological condition, caused by an uric acid diathesis; that the uric acid circulating constantly in the blood produces an irritation of the vaso-motor centre, which in turn produces the structural changes of the heart, kidneys and blood-vessels.

Da Costa, in the Middleton Goldsmith Lectures for 1888, entitled "On the Relation of the Diseases of the Kidney, especially the Bright's Diseases, to Disease of the Heart," brings forth five hypotheses or theories as to the cause of said pathological changes; the first and second claiming that the cause of the organic trouble is impure blood, which causes a contraction of the arterioles, which in turn causes the organic changes in the heart and kidneys. The third and fourth theories claim substantially that the structural changes in the heart and kidneys are produced by an organic change in the coats of the arterioles, thereby diminishing their calibre and increasing the resistance to the flow of blood. The third and fourth theories are substantially the same as the first and second, only the former begin at a later stage of the same pathological process. Fothergill has shown pretty conclusively that the organic changes in the arterioles are produced by the increased blood pressure caused by a spasm of the arterioles, which is caused by blood laden with toxic matter

producing an irritation of the vaso-motor centre. The fifth view, which in its main features flows out of some researches made by Drs. Da Costa and Longstreet, is that the original lesion is situated in the nervous ganglia. It is probably there that the trophic centres of the heart, kidneys and blood-vessels are located, although Da Costa seems to differ from Fothergill in that the original seat of disease is in the nervous ganglia. The discrepancy is more apparent than real, for Da Costa says: "I would thus locate as most likely the original starting point of the alteration of the vessels and of the heart muscle, in the nervous ganglia, in the parts of the nervous system controlling the nutrition of these textures."

"What the ultimate cause of the lesion is cannot be stated, nor need we assume that one cause alone will determine it. It may be gout, it may be lithæmia, it may be rheumatism, it may be alcohol, it may be lead, it may be purely perverted nervous functions from worry, from strain or from anxiety. Any one of these causes may start that alteration in the ganglionic nervous system which leads to degeneration and to the formation of increased fibrous tissue, and subsequent atrophy, and with it also to derangement in the heart and in the muscular textures supplied by the affected ganglia and nerve filaments." Thus we see that although the first anatomical change occurs in the nervous centres, the ultimate cause (according to Da Costa) of such change, is either a toxic condition of the blood or perverted nervous function from worry, etc.

We are not satisfied in the present, as many seemed to have been in the past, in finding the structural changes that have taken place, but we search further and endeavor to find the causes of such changes, in hopes that we may remove the cause before irreparable change in structure has taken place.

It is difficult in the present state of our knowledge to properly classify the various disorders of the nervous system that are due to a toxic condition of the blood; but in the present paper I will classify them according to the location of the lesion, hoping thereby to facilitate the study of the subject. First commencing with the peripheral nerve, we have multiple neuritis, which is nearly always caused by a toxic condition of the blood.

Cases caused by toxic agents introduced into the body. The most common one by far is alcohol, and it is a singular fact that most cases of multiple neuritis due to alcohol occur in females. The other poisons that produce multiple neuritis when introduced into the blood are arsenic, lead, and probably bisulphide of carbon and illuminating gas.

Second. Neuritis in zymotic diseases. The poisons of zymotic diseases are very productive of multiple neuritis. Those that are known to produce it are the poisons of diphtheria, variola,

typhoid and typhus fevers, severe malarial fevers, dengue, beriberi, and I have seen one case that was caused by erysipelas, and another that followed erysipelas and rheumatism, so it was doubtful which was the cause of the neuritis.

Third. Other blood states that are productive of multiple neuritis are those incident to gout, rheumatism, syphilis, septicæmia and leprosy. I have seen some cases that were probably cases of mild multiple neuritis in lithæmia, although the symptoms were not well enough marked to make the diagnosis absolutely certain.

Neuralgia.—I take up this subject at this point as a matter of convenience, keeping in mind at the same time the fact that neuralgia is of central origin, and when dependent on a toxic condition of the blood it is caused by the toxic agent irritating the central terminations of the nerve fibres, *i. e.*, the nerve cells. The blood states that produce neuralgia are diabetes, gout, rheumatism, syphilis, typhoid fever, malaria, lithæmia, uræmia and the various toxic agents that are produced by disorders of digestion. Some cases of neuralgia that are due to disorders of digestion are reflex, but the large majority are undoubtedly toxic.

There is a class of cases in which there is numbness of the extremities, more particularly of the hands and forearms, in which there are no symptoms of organic disease. Some of these cases are without doubt toxic. They occur in uræmia, lithæmia and alcoholism. It probably occurs in other toxic states, but we have no exact knowledge in regard to the subject.

Diseases of the Spine.—Acute myelitis is sometimes caused by the poisons of variola, typhus and typhoid fevers, rheumatism and puerperal fever. It is doubtful if acute myelitis is ever caused by syphilis or alcoholism, but they each undoubtedly cause subacute myelitis.

Chronic Myelitis.—The only blood poisons that are known to produce chronic myelitis are syphilis, alcohol and lead.

Acute Atrophic Paralysis.—It is doubtful if this affection is ever caused by the blood state, although it sometimes follows scarlet fever and measles, and in older children and adults typhoid fever and ague.

Acute Ascending Paralysis.—This disease is caused by the poisons of small-pox, diphtheria, typhoid fever and syphilis. Spinal hæmorrhage is caused indirectly by the action of the poisons of syphilis and alcohol on the coats of the blood-vessels.

Locomotor Ataxy.—In this disease the only blood state that seems to have a causal relation in many cases is syphilis, and although about 70 per cent. of the cases of locomotor ataxy are caused by syphilis, it does not seem to be so much the blood state that causes the disease, but it is rather a degenerative sequel of syphilis than a true syphilitic disease. The lesion is not syphi-

litic in histological character and the disease is rarely influenced by antisyphilitic treatment. A few cases seem to be caused by rheumatism, typhoid fever and alcohol.

Primary Spastic Paraplegia.—Syphilis seems to be the cause of this disease in a few cases, as it does also of some other degenerative diseases of the spinal cord.

Diseases of the Spinal Membrane.—Acute internal meningitis is sometimes caused by the poisons of scarlet fever and typhoid fever, acute rheumatism and septicæmia. Chronic internal meningitis is sometimes caused by the poison of syphilis, also by alcohol. Spinal meningeal hæmorrhage is sometimes caused by the blood state, as in puerpura, and in the hæmorrhagic forms of some acute specific diseases.

Cerebral Disorders.—There is no part of the nervous system that is as susceptible to the influence of toxic agents as is the brain, and it is not to be wondered at when we consider its delicate and complex structure and the diversity and complexity of its functions. The abundance of the blood supply to the brain, which is necessary for its functional activity, renders it all the more susceptible to the influence of toxic agents. Our knowledge of the etiology of cerebral disorders is so imperfect that it is difficult to treat the subject systematically, but I will try and present the subject in as practical a manner as I can.

First, taking diseases of the membranes. Hæmatoma of the dura mater or internal hæmorrhagic pachymeningitis is sometimes caused by the septic blood of typhoid fever, small-pox, etc., and frequently by the prolonged use of alcohol. Purulent meningitis is always (so far as I know) a secondary disease. As Stumpell says: "We should therefore seek most carefully in every case of purulent meningitis at the bedside, and more particularly at the autopsy, to discover the way by which the pathogenic virus reaches the meninges." The toxic agent is sometimes the specific poison of the various zymotic diseases, as the septic material that is developed in the later stages of the malignant form of zymotic disorders, also the septic poison from various wounds, abscesses, ulcerative endocarditis, etc.

Tubercular Meningitis.—Most cases of tubercular meningitis are secondary to the lung trouble, and the septic material is probably carried to the pia mater through the medium of the blood. When the meningitis is primary the virus or bacillus is carried to the pia mater through the medium of the blood, but why the bacilli should attack the pia mater and not the lungs, or other tissues, we do not know, but the age of the patient seems to have some influence. Thrombosis of the cerebral sinuses is sometimes caused by the specific virus of severe zymotic diseases.

Disturbance of Circulation in the Brain.—In many cases of hyperæmia or anæmia of the brain

the blood is not always toxic, as there may be simply an excess or deficiency of some of its normal constituents. There are many toxic remedies that influence the circulation of the brain. Alcohol, nitro-glycerine, nitrite of amyl, small doses of opium and many other remedies increase the blood supply to the brain; some by increasing the heart's action, as in the case of alcohol; others by dilating the arterioles and capillaries, as is the case with nitrite of amyl. Ergot, the bromides, chloral hydrate, veratrum, gelseminum and some others diminish the blood supply to the brain. Ergot, for example, accomplishes the result by contracting the arterioles, while others, like veratrum, produce the result by their action on the heart. Alcohol is the most prolific cause of cerebral hyperæmia, and it seems to be caused also by the poison of most acute specific diseases, as well as general plethora.

We are all familiar with cases of cerebral hyperæmia in patients that have disordered digestion with constipation. In these cases the hyperæmia is probably caused by poisons formed during imperfect digestion and absorbed into the circulation.

Anæmia of the brain is caused by loss of blood, and general anæmia by many drugs and poisons that are introduced into the body, as well as some toxic agents that are formed in the system, viz.: an excess of urea and probably also a curara-like poison formed during imperfect digestion and studied by Brunton, also an atropia-like poison, and likewise peptones, ptomaines, etc.

Cerebral Hæmorrhage.—A healthy artery probably never ruptures from blood pressure. Some pathological changes in the coats of the arteries are necessary as a predisposing cause; the most common change being miliary aneurism. The most prolific causes of the pathological changes in the coats of the arteries are alcohol and the poisons of gout, viz.: uric acid, also Bright's disease and the virus of syphilis. Thrombosis is frequently caused by syphilis.

Tumors.—Syphilitic and tubercular tumors are caused by the virus of their respective diseases.

Insanity.—There are a few forms of insanity that are caused by toxic agents, viz.: alcoholic insanity, syphilitic dementia and saturnine insanity. Syphilis and alcohol also play an important part in the production of many cases of parietic dementia.

Convulsions.—Although there are many toxic agents that will produce convulsions, those produced by an excess of urea are by far the most important—whether they occur in the puerperal state or not.

Neurasthenia.—Neurasthenics form a large class of our patients, and we are apt to think that all cases are caused by overwork or worry, and not look farther for a cause; but there is a large class of patients in the cities and larger towns of seden-

tary habits that are not overworked and that are well nourished. They go to their physician, and he says, "You are run down;" and he prescribes a tonic. The patient returns soon and is no better. Perhaps you prescribe another tonic and he returns again without any improvement, and then you tell him that he must leave his business and go into the country for a rest. While in the country he takes long tramps, fishing or hunting, or climbing mountains sightseeing, thereby getting more exercise in a week than he would in a month at home. In two or three weeks the patient feels strong and vigorous; his spirits are buoyant, and he feels that the change of air has produced the cure; but how sadly is he disappointed when, two or three weeks after his return to his counting room or office, he finds that he is as bad as ever. How do we account for this condition of things? It is simply this: he is not overworked, but he is overfed. He takes no exercise, and he keeps up his appetite with relishes, condiments and perhaps wine, so that he is enabled to take into his stomach two or three times as much as the laborer that works on the highway. Thus we see that the depression is caused by an excess of food.

The patient takes into his stomach more than he can assimilate, and the products of imperfect digestion are absorbed into the circulation, where they act as poisons to the nervous system. We can compare the patient to a stove. We put on the fire fresh coal before we remove the burned out waste material from below; now we find that instead of our fire burning briskly, it is more deadened and useless than before. If we had removed the products of waste by shaking it down the fire would soon have brightened up; so it is with our patient.

I have omitted some affections that are sometimes caused by a toxic agent in the blood—but, fearing that I will weary your patience, I will conclude this paper with the subject of headaches.

There have been many attempts to classify headaches; some systems are very complicated, others very simple, but all are open to objections, and no system, in the present state of our knowledge, can be faultless.

One author simply divides them into two classes, viz.: anæmic and hyperæmic. He claims that this classification tends to simplify treatment, but I think it tends to mislead one, as the following will illustrate:

Mrs. S., æt. 35 years, was sent to me by Dr. P. She complained of severe and persistent headaches and nothing else. Dr. P. made an ophthalmoscopic examination and he found optic disc anæmic.

The arteries seemed wiry, and I concluded that it was a case of anæmic headache due to spasm of the arteries, and put the patient on nitro-glycerine. It gave her relief, but the pain would return as soon as the effects of the remedy wore

off. I ordered her to save me a sample of her urine. I found that it was loaded with lithates. I then put her on a course of blue pills, saline purgatives and alkaline diuretics, and ordered her to abstain from eating meat. She made a speedy recovery.

Thus we see that we had an anæmic headache that was in fact a toxic one. The most common toxic headache is probably produced by alcohol, with the possible exception of the digestive headache. Although some digestive headaches are undoubtedly reflex, they are nearly all toxic.

There are a great many toxic agents that are capable of producing headaches. Among the most important are alcohol and the various narcotics—lead, impure air, various gases, viz.: illuminating gas, carbonic oxide, sulphuretted hydrogen, etc. There is the poison of various zymotic diseases, of gout, rheumatism, diabetes, Bright's disease; and there is the uræmic headache and the headache of lithæmia. It therefore behooves us in every case of nervous disease not only to locate the lesion (if the disease be organic), but to examine carefully and ascertain if there is any toxic agent that is producing the trouble.

SOME CASES OF INFLAMMATION AND ATROPHY OF THE OPTIC NERVE WITH SPECIAL REFERENCE TO ETIOLOGY AND PROGNOSIS.

Read in the Section of Ophthalmology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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Of all diseases of the eye and its appendages, none are more perplexing to us as regards etiology and prognosis than are those of the optic nerve. Inflammations and atrophies of said nerve are easily diagnosticated, but when asked the question, what caused this or that inflammation or atrophy? or, what will be the result? then do we often find ourselves unable to answer. Some of them may be read as easily as an open book while others upon the contrary baffle us at every turn, and though every opportunity may be offered by the patient objectively and subjectively, still sphinx-like the cause forever remains to us a sealed scroll.

Take for example the two cases which follow:

Case 1.—J. D., aged 38, occupation baggage master, a fine looking man the picture of health, who came to see me about his failing sight which was found at that time to equal $\frac{2}{8}$ in either eye, the ophthalmoscope revealed well marked commencing atrophy of the discs, which contained fewer nutrient vessels than normal. A most careful examination of this patient, objectively and subjectively, failed to give any clue as to the cause of the change above mentioned. He never

had syphilis, rheumatism, kidney or heart trouble, spinal disease of any kind, nor was he troubled with any affection attributable to malaria. He used neither alcoholic beverages, nor tobacco in any form. I put him upon increasing doses of the iodides for some weeks, but as no good results followed, hypodermic injections of strychnia were used, beginning with small and ending with large doses, but in spite of this, his vision slowly but steadily decreased in acuity until it fell to $\frac{1}{200}$, where it remained for 9 months, when I lost sight of him, he having left the city.

Case 2.—C. S., aged 23 years but looks much younger; indeed he has the appearance of a boy; height 4 feet 11 inches, weight 90 pounds. His sight commenced failing in the left eye sixteen months ago while engaged in drafting in an architect's office in Minneapolis, Minn. He soon consulted an oculist of that city, who diagnosed commencing atrophy of the left optic nerve. His vision slowly became worse, until about three months ago when he could not see any object with it. Again did he consult the oculist, when complete atrophy of the nerve was found to have taken place; but no cause for it could be discovered. Another able oculist was called on, who found as did the other gentleman, nor could he arrive at any definite conclusion as to its cause, nor could either of them tell the young man or his relatives as to the probable result in the other eye; they feared however that it would be attacked also. He called on me June 2nd, 1889, when I found as did they, white atrophy of the left optic nerve with vision equal 0, and in the right the disc looks a trifle whiter than normal, vision equals $\frac{1}{8}$ nearly (misses two letters in the line). The eyes looked natural externally except the appearance of a slight insufficiency of the internal recti muscles; the pupils are of equal size, but when the right eye is closed by holding a handkerchief over it the left pupil does not respond to the brightest light. I have questioned him and his sisters in every way in order to arrive at its probable cause, but only get the following history: Father and mother both dead, the former from gall stone, the latter from consumption. His sister says "Carl has had vomiting spells at different times for at least thirteen years. They have never seemed to occur at any special time of the day, and seldom have they occurred when we could feel that there was a cause for them, nor have they come on at regular intervals. They usually begin with a dull headache soon followed by vomiting, which continues (during the severe attacks) for hours and sometimes days. The vomiting is usually followed by sleep. He vomits great quantities of mucus and bile. The intervals between vomiting are not regular, sometimes not more than fifteen minutes apart, again a half an hour or an hour or more. He always

looks very pale about the mouth and nose, the latter having a pinched appearance. We feel that these attacks have become less frequent and less severe. In the last three years I do not think he has had more than four attacks, during which the vomiting has lasted a day and night, yet he has had others less severe when he looks pale, is sleepy and has no appetite."

It will be seen from the above that his sight did not begin to fail until after these paroxysms of vomiting had become less severe. He never had any symptoms of malarial poisoning, no spinal symptoms, nothing to indicate tumor of the brain. His urine is normal.

Remarks: The two cases given above are typical of many similar ones which we all very frequently meet with. Doubtless, there is not a person present of ten years' experience in this specialty, who has not had at least forty similar cases. I have watched many such, where both nerves have failed; as in case No. 1, and though the cause forever remains obscure during life, and doubtless even an autopsy would give negative results, the prognosis in such cases is that though they may remain stationary they never improve. As regards the prognosis in case No. 2, the question usually asked is, am I liable to become blind in the other eye? Unfortunately, the physician first consulted over a year ago, does not give the exact acuity of vision, he simply recorded vision in right eye normal. If it was $\frac{2}{20}$ a decrease has already taken place, as it now only equals $\frac{1}{30}$. It is more than likely though, that the young man's acuity of vision never was greater than $\frac{1}{30}$, or possibly, when the left eye failed the right participated and has remained stationary since. From many similar cases which I now remember having seen my prognosis would lean to the belief that as the left went so rapidly, and an interval of over three months having elapsed, in which the young man has noticed no change in the other eye, the cause which led to the atrophy has expanded its force on the left and has ceased to exist.

Case 3.—Mrs. H., aged 28, mother of two children, the youngest two years old, was attacked with a pernicious intermittent fever on the 21st of August, 1878, she became stone blind immediately. I saw her in consultation with her physician seven days afterward and made the following record: Pupils widely dilated and fixed, eyes have the peculiar expression of one totally blind, balls move in every direction (they were said to have been fixed for several days after the attack), cannot perceive the brightest light. Phosphines not produced when pressure is made over the region back of the ora-serrata, vessels of discs and retinae look as small as threads. The supposition being that there was an effusion of serum at the base of the brain, she was treated with counter-irritants on the back of the neck

and given increasing doses of the iodide of sodium and tonics. She began to discern light in about two weeks, and in two months large objects, but relapsed and remained blind for six months. My second examination found the optic discs almost as white as glistening pearl, with no nutrient vessels in them and the central vessels small as threads. For several years she could only distinguish between light and darkness, but, after six years her vision began to improve and in the spring of 1888, ten years after she was first attacked, her vision equalled $\frac{2}{20}$, and she can now drive her phaeton over the familiar roads. Several other cases of amaurosis have I seen, which were caused by severe forms of intermittent fever, but this is the only one which improved after so severe and well marked atrophy of the discs.

Case 4.—A young man aged 18 years became suddenly blind while playing violently at base ball. He called on me a few days afterward when neuro-retinitis with terribly choked discs, and hæmorrhagic patches over the fundus of each were manifest. He could not see a ray of light with either eye. He was leeches very freely on the temples, and salines were administered. One eye remained permanently blind, with the snow white disc; but, after a few months the other so improved as to enable him to teach a country school, and at my last examination, five years subsequently, his vision equalled simple perception of light right and $\frac{2}{30}$ left.

Case 5.—Mrs. P. B., aged 27, mother of three children, the youngest one year, then nursing. She brought me a letter from her physician who stated that he was treating her for sub-involution of the uterus, when she took a violent headache and in three days became entirely blind. My examination showed that she could not see a ray of light, the pupils were dilated to the utmost, and unmovable, T+ $\frac{1}{2}$ each eye, the discs were fearfully choked, arteries almost invisible, veins very tortuous, and only to be seen in places. She had a very thick short neck and flushed face, with ears as red as a boiled lobster. Salines were given, leeches were applied every few days, the child was weaned, and increasing large doses of the iodides with bromides were given. She began to see the light in three days, then large objects. They steadily improved until her last visit, three months after the last attack, when vision equalled $\frac{2}{30}$ either eye.

The two cases above were of the congestive type, in which the prognosis is usually highly favorable.

Case 6.—Mr. A. McC., aged 23 years, was sent to me in February, 1883, with a letter from his physician saying: I was called to see him last August when he had a high degree of fever, headache and vomiting, which lasted five days; his temperature was 103°; has had three similar at-

tacks since and has just recovered from one; have given him bromides, strychnia, etc. On questioning the patient I learned that he had been treated by another doctor for a chancre and buboes long before the physician who sent him to me had seen him. I found double optic neuritis with choked discs and dilated pupils, with vision equal 0. I wrote to his physician suggesting that he treat him for basilar meningitis, with very large doses of the iodides. He became better but I never learned what the acuity of vision equalled.

Case 7.—Miss S. S. D., aged 22, a delicate refined looking lady teacher in a seminary, brought to me by her physician who supposed she had hysteria; he told me that he did not think it necessary that I should see her, but on the opportunity of her friends had brought her, that he had examined her eyes with the ophthalmoscope, had found no structural trouble, and had so informed her, and also predicted that as soon as she gained a little more strength she could resume her school work. He informed me that she had been taken quite seriously at first with a very intense and persistent headache and vomiting, her temperature had been very high, her appetite very poor and she had become very nervous, but as she became better the hysteric symptoms came upon her. I found the pupils dilated and rather sluggish; made drawings of each fundus while the physician looked over my shoulder. There was well marked inflammation of each optic nerve, which was serrated and extended far beyond its normal boundry; the vessels could only be seen in places, arteries thread-like, veins tortuous and sacculated in places; there was well marked effusion between the sheathes of the nerve. It was as plain a case of basilar meningitis as ever was seen. She was put upon the iodides and tonics, became better, went home to her parents in Vermont, but, as I have since learned, died six months subsequently, from what disease I have not learned.

The two cases reported above were very similar in many particulars. From the colored drawings which accompany my records on my case book, one can scarcely see a particle of difference, and yet the causes which brought these conditions about were widely dissimilar. In the one, case No. 6, syphilis was the important factor, while in the other which took place in a refined delicate lady teacher, doubtless undue mental strain with loss of rest was the cause. The prognosis in case 6 was rather favorable, while in case 7 it was much more grave.

Case 8.—Anna F., aged twelve years, brought to me by her mother on April 17th, 1884, with a letter from her physician, had suffered with terrible headaches for six months, during which time she had vomited very hard every Sunday morning; two weeks before they consulted me she had convulsions, four during one night; was

unconscious for one day, then became quite blind. In two days her sight became better but was followed by paralysis of the left side of the face, and ringing in both ears. My examination found pupils slightly dilated but responsive to light, eyeballs straight and movable in every direction, vision equalled $\frac{2}{10}$ right and $\frac{2}{7}$ left. The ophthalmoscope revealed well marked neuro-retinitis both eyes and choked discs, with effusion beneath the sheathes of the nerves. A letter was given to her physician who placed her upon the iodides, increasing doses. I saw her again in one month and found the fundus of each eye looking much better, vision also had improved to $\frac{3}{7}$ right and $\frac{2}{5}$ left eye. I learned afterward that she soon became worse, when they changed their physician for one who was both physician and specialist in the eye. She died September 30th, when her former physician tried to get consent to a post mortem examination, but, through the influence of the last physician called it was refused. It was evidently one of tumor of the brain, this had been my diagnosis, and as the prognosis was gloomy and imparted to the parents as such, probably it brought about a change of doctors.

Case 9.—D. W. B., aged 12, was also sent by her physician on account of her failing sight and double vision occasionally. Her health had not been good since an attack of typhoid fever nearly two years before. She had been subject also to an occasional epistaxis since she was four years old, but lately had complained of most atrocious headaches. My examination resulted as follows. Eyes equally well opened, movement of eyeballs complete in every direction except that they behaved as do eyes with an insufficiency of the internal recti, which on the use of prisms proved to be the case. Pupils natural and mobile, vision equals $\frac{2}{10}$ right and $\frac{2}{5}$ left, apparently emmetropic. With ophthalmoscope I found a double optic neuritis with slightly choked discs. I at once wrote to her physician that I feared we had brain tumor to deal with and had her put on the iodides as in the preceding case. She improved for a while but as she fancied that the medicine caused sickness to the stomach it was discontinued, but still she continued to vomit every morning about 4:00 o'clock for about three weeks after the medicine had been stopped. She then improved in appearance, increased in weight and her sight became better. Ophthalmoscopic examination showed that the optic discs had become flatter and less evidence of inflammation was manifest, indeed they looked almost natural. On April 5th, her mother informed me that she had a chill and sinking spell, with temporary loss of power in the right arm and side, this soon passed off but the vomiting again came on in the morning as did the headaches. Again did she improve and was taken on a visit to relatives in

Kentucky. Still she never felt quite well. "O mother," she would say, "I wish people would not ask me if my head hurts me? it always hurts, but not enough to keep me from reading or playing." I saw her but twice after April 6th, when I noticed a well marked prominence of the left eye ball, though not as much as is met with in the milder cases of Graves' disease. Her vision, however was much improved and the discs looked almost natural. Her subsequent history as given me by her mother after her death is, that she played and read as usual until six weeks before her last sickness, when she had an attack resembling erysipelas, red puffed and shining skin, which her physician soon relieved with a lead lotion. She then became apparently better than ever. Had a ravenous appetite until May 1st when the vomiting and headache returned worse than before. She soon lost all use of herself and could not even be propped up in the bed. Her physician found her completely paralyzed, with the left eye much protruded and a purulent discharge from both. She sank very rapidly and died. I was invited to the post mortem which was made 20 hours after death. Her eyes then looked quite natural, with not the slightest protrusion of either. On removing the calvaria the membranes were very much congested as was the surface of the brain. About five ounces of serum escaped during the removal of the brain which was carefully sliced away. Nothing of note appeared until the cerebellum was reached, when we found the entire left lobe occupied by a tumor of much greater density than the brain substance. It was hardened and sent to Dr. H. Knapp of New York for a microscopic examination. Dr. J. E. Weeks, a very skilful microscopist, said of it: "It shows the structure of gliosarcoma. The fatty changes in the interior of the tumor are quite extensive. There is also extensive round cell infiltration into the surrounding tissues."

Remarks: In the two cases just reported there is a remarkable coincidence. Both were young girls aged 12 years. Both had symptoms of meningitis as well as of brain tumor. One point of interest connected with these growths is that the patient often becomes much better, with greatly increased acuity of vision, and almost complete disappearance of inflammation of the optic nerve, so much, at times as to almost cause one to doubt the correctness of his diagnosis. Another point worthy of mention is that though one is confident that he has a tumor to deal with, yet to locate it during life is usually impossible. Who would have supposed that after a double optic neuritis with protrusion of the left eye that the tumor was as far back as the left lobe of the cerebellum? Again; the nature of the tumor cannot be arrived at during life, consequently we cannot be positive that death will certainly result, as there are

many cases on record where every symptom of tumor was manifest, and yet under the use of the iodides they have disappeared. If my allotted time permitted I should add cases of inflammation and atrophy of the nerve from Bright's disease, alcoholic and tobacco poisoning, and pigmentary degeneration, but the prognosis in these is by no means uncertain. In the first, Bright's disease, all of my patients have died in from one month to two years, except when the disease occurred in the puerperal condition. Several of these have died, some have recovered perfect vision, and one remains entirely blind with white atrophy of the papillæ. In alcoholic and tobacco poisoning we may promise much, if the patient will abandon the poison before atrophy has set in, but if that has already commenced I have never seen the slightest improvement in vision follow. In pigmentary degeneration of the retina either in the congenital or acquired form, atrophy of the nerve accompanying it has never, so far as I have seen, improved in the least degree, but on the contrary has gradually become worse. From my observations in several hundreds of cases of inflammation and atrophy of the optic nerve during the last eighteen years, I have been led to the following conclusions:

First. Progressive atrophy with no evidences of former inflammation, rarely gives any clue to its etiology. In such cases the prognosis is, that vision rarely improves. If it occurs in but one eye which quickly becomes blind and after an interval of several months no sign of failure in the acuity of vision takes place, then the prognosis is favorable as to the second eye.

Second. In atrophies of the nerve following pernicious intermittent fever, though vision has been almost nil for years, it often improves very much when least expected.

Third. Inflammations of the optic nerve resulting from violent exercise, disturbances in menstruation, etc., occurring in plethoric persons admit of a very favorable prognosis.

Fourth. Atrophies occurring in very anæmic patients usually permanently impair or destroy vision.

Fifth. Where inflammation of the nerve is caused by meningitis and that is of syphilitic origin the prognosis is highly favorable; but when said meningitis is of other origin the prognosis is gloomy as to sight and life.

Sixth. Inflammations of the optic disc caused by brain tumors often change so in appearance, and such improvement takes place in the patient, owing to subsidence of meningeal inflammation, effusion and other modifying causes, that one is liable in some cases to doubt the correctness of his diagnosis or to modify his views as to the prognosis; but death is the result with few exceptions.

Seventh. Inflammation of the optic nerve and

retina occurring in the course of Bright's disease, means death in from one month to two years. I have seen many cases and none have survived the last mentioned period, except pregnant women; some of these have died. One (in whom premature labor was brought on) has perfect vision and one where it was not produced is stone blind.

Eighth. Atrophy of the optic nerve following long continued abuse of alcohol and tobacco combined calls for an unfavorable prognosis as regards vision. But where those poisons are given up before atrophy sets in, even though the sight is but $\frac{1}{2}$ $\frac{0}{10}$, perfect restoration of vision usually takes place, not by the "tapering off" method, but by the sudden discontinuance.

Ninth. Atrophy occurring during the process of retinitis pigmentosa, either congenital or acquired, offers nothing favorable as to prognosis.

INTERNAL EAR DEAFNESS, ILLUSTRATED.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY J. G. CARPENTER, M.D.,
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The theme of labyrinthian deafness is one of very great interest, because it is so often incurable, and is generally secondary to, or the sequel of many affections; and to cure the disease, the ailment on which it depends must be cured, the pathological lesions removed, before irreparable structural changes have taken place in the inner ear. The premises will be made in this paper that internal ear disease is dependent more often on middle ear disease, and the latter, most frequently dependent on chronic nasopharyngeal catarrh, for the predisposing cause, and acute congestion or acute inflammation of the upper respiratory tract and aural apparatus, for the exciting cause; making due allowance, of course, for other etiological factors. Experience and observation teach the writer that doubtless chronic nasopharyngeal catarrh is present in the majority of such cases; is the most frequent of all other causes; and, if the previous history of these cases was ascertained before the labyrinthian deafness supervened, chronic catarrh of the nasopharyngeal passages would be found the starting point.

Mr. —, age 35 years, previous health and family history good, came to be treated for slight deafness. Upon rhinoscopic and aural examination it was ascertained that he had chronic nasopharyngitis with catarrh of the Eustachian tubes and tympani; audition in right ear, $\frac{1}{4}$, left ear $\frac{2}{4}$; the membranæ tympanorum more or less opaque; the light spot diminishes in the right more than in the left. The turbinated pro-

cesses and septum hypertrophied. Patient admits that the deafness supervened a year or two after the catarrh of the nasal chambers. The disease improved rapidly from the local use of warm, mild, soothing, astringent, non-irritant sprays, and inflation of the Eustachian tubes with warm air (using Rumbold's warm air inflator) daily for a week. The chronic catarrh improved rapidly, and the deafness was relieved. In a few days an acute catarrh of the upper air passages occurred and extended into the middle ear; the deafness also returned. The acute attack was soon checked, and local treatment continued, the Eustachian tubes being inflated daily for several days. But the hearing in the right ear instead of increasing as before got worse, and within two weeks from the acute attack deafness was complete. No aerial or bone conduction of the vibrations of the tuning fork could be discerned. Upon close interrogation, patient admitted that during a sojourn in the city, several weeks previous, he contracted what the physician called chancreoid, but that it had healed. On examination by palpation and ocular inspection a chancre and a typical case of syphilis was diagnosed. Patient was placed on anti-syphilitic treatment; in three weeks from the commencement of the latter, tuning fork could be heard; in six weeks the labyrinthian deafness was cured, and syphilis eventually eradicated. In addition to the congestion and effusion from the acute catarrh in the aural apparatus there was also a syphilitic exudation, no doubt, pressing on the auditory nerve suspending its functions temporarily, and which was relieved and cured by the anti-syphilitic treatment.

W. S. M., age 40 years, has good health, and an excellent family history. In the month of June had intermittent fever for which he took, of his own accord, fifty grains of quinine in twenty-four hours. He was sponged freely with cold water during the pyrexia, and after the subsidence of fever the bed was left during the night between two open windows; from the exposure to the draught an acute rhinopharyngitis, with acute otitis media, and internal ear deafness of right ear developed. Neither the tick of a watch, loud conversation, nor the tuning-fork could be heard. Bromide of potassium, gr. xxx, and the iodide, gr. v, were given three times a day for a week. The former, when given with quinine, prevents the tinnitus aurium, throbbing, and headache, if the latter, and was given to arrest congestion; the iodide was given to cause absorption of any effusion in the labyrinth. The external ear was syringed with water as hot as could be tolerated every half hour, or hour, to check pain and inflammation. The nasopharyngeal chambers were sprayed with warm, soothing, mild, non-irritant, astringent medicines, with vaseline for the base; one or two drachms were

used at each treatment daily for five days. The third treatment was supplemented by inflation of the Eustachian tube with Rumbold's warm air inflator, as were the subsequent treatments. After the fifth day local treatment was given every other day for a week. By the seventh day the acute attack had subsided, and by the tenth day the internal ear deafness was cured. The potash mixture was discontinued and patient directed to avoid exposure and employ daily massage of the integument.

Did the fifty grains of quinine administered in twenty-four hours cause congestion and effusion in the labyrinth and internal ear deafness? or was it the acute inflammation of the nasal chambers extending by continuity of tissue from the Eustachian tube and middle ear to the inner ear? The writer believes that both were important factors directly concerned in the production of the labyrinthian deafness. First, because quinine is known to cause congestion and effusion within the membranous labyrinth; not only this, but it may congest the tympanic cavity and auditory canal, as is proven by the tinnitus aurium, headache, dizziness, and impairment of hearing, which follow large and repeated doses of quinine; the latter in large doses has been known to cause "severe otitis." Patients who have taken large doses at short intervals have often said to the writer: "Last evening I had neuralgia in my ear and I awoke in the night from a popping noise in my ear; I ascertained that there was a discharge from it, and as soon as the discharge began the pain left." On the auroscopic examination the drum-head would be found perforated and a serous, or serosanguinolent, otorrhoea present, and this otitis has occurred independently of any cold. Page 155, Roosa's "Treatise on Diseases of the Ear" gives a case illustrating quinine as the important factor in the production of "severe otitis." At page 504 he states; "I have been convinced by experience that it (quinine) has a peculiar power of congesting the auditory apparatus." But at page 157 in addition to proving that quinine caused the "severe otitis," he has not disproved that from time to time coincident with taking the large doses of quinine that there was not also a subacute rhino-pharyngitis ingrafted upon the chronic, extending by continuity of tissue to the auditory apparatus, and equally important, if not more important, than the quinine in causing the "severe otitis." At page 155 Dr. Roosa states the laryngeal inflammation was followed by chronic naso-pharyngeal catarrh. On this point the cart seems to have been placed before the horse, or the shadow has been taken for the object *per se*, for the laryngeal and aural affections had their origin in the naso-pharyngeal chambers, and the former were but the sequelæ of the latter, aggravated by acute or subacute inflammation. But at the time this case of Dr. Roosa's

was published the millenium of rhinology had not come to pass. Now old things have passed away and we no longer see through a glass darkly; it is true that a bird's-eye view had been taken of the rhinal passages, but the primary, clinical, anatomical, neurological, and pathological, importance they now possess was not accorded them until within the last decade.

By treating locally the naso-pharyngeal chambers the labyrinthian deafness and middle ear complications subsided, *pari passu*, as the acute inflammation of the upper respiratory tract did, proving almost conclusively that the disease was originally in the naso-pharyngeal chambers. It can be easily seen how by extension of inflammation by continuity of tissue from the rhinal passages through the Eustachian tubes and tympana the labyrinths may become involved; either an effusion in the tympanum causing pressure inward of the inner tympanic walls, or membrane of fenestra ovalis and membrana tympani secundaria, and involve the auditory nerve in the vestibule and cochlea; or the congestion and effusion may be so great as to equally involve both the middle and inner ear and produce labyrinthian deafness.

Miss —, age 23 years, health feeble, has never been strong and healthy since an attack of scarlet fever in childhood, and from this period she has had throat disease. Subjective examination presents the following: patient is anæmic, slightly dyspeptic, despondent, irritable, has more or less constant occipital or frontal headache, has ringing of bells in the ears, is weak and tottering, has cold hands and feet, blank, desponding expression, skin harsh and dry, has laryngeal irritation and discomfort, mouth breathing, great inclination to swallow, tongue coated white, sense of smell impaired, bad taste in the mouth, more or less hawking and expectoration, cries a great deal, is subject to neuralgia; is, in fact, quite neurasthenic. On rhinoscopic and auroscopic examination the accompanying described states were present, chronic, hypertrophic naso-pharyngeal catarrh; Eustachian and tympanic catarrh; the drum heads opaque, the left more than the right, the light spots diminished; audition of both ears was nil, neither the watch, loud conversation, nor the tuning fork could be heard; there was complete inner ear deafness. When the impaired hearing was confined to the middle ears the hearing would improve in dry, warm weather, and get worse in damp or wet weather. Patient is quite subject to colds, in fact is seldom free from one before another begins; really has the so-called catarrhal diathesis.

Constitutional treatment consisted of ferruginous and nerve tonics internally; innunctions of vaseline and massage externally daily, as the hot bath was enervating and added to the discomfort and suffering of the patient. A cold

bath or a tepid one caused repeated attacks of subacute catarrh, or cold in the upper respiratory and aural passages; consequently vaseline inunctions and massage were really in demand and necessary to cleanse and stimulate the skin, and restore the latter and the circulation to their former natural state, and to fortify the body against future colds.

Local treatment consisted of warm, mild, soothing, astringent and non-irritant applications in the form of a spray, with vaseline, 3j, for its base, combined with oil of eucalyptus, gtts. v, Kennedy's pinus canadensis, gtts. xv and carbolic acid, grs. ij, made into a mass, and one or two drachms of this sprayed into the naso-pharyngeal passages, preceded when necessary by the cleansing lotion of Dobell, or listerine and glycerine each 3j, dose one teaspoonful with one of chloride of sodium in a pint of water, and sprayed warm; (for twenty days.) Fifteen days after the commencement of treatment, when the inflammation was greatly reduced, as were also the swelling and infiltration, the Eustachian tubes and middle ears were inflated with Rumbold's warm air inflator, charged with distilled water Oss. tr, iodine, 5j, daily, after the cleansing mixture and vaseline compound had been used. This treatment was used for inflation because the air in the Eustachian tubes and tympana is believed to be in a rarefied state normally. Second, because from the congestion and infiltration of their lining, warm rarefied air is much more likely to permeate the Eustachian tubes than cold air from Politzer's method, the Eustachian catheter, or from Pomeroy's faucial catheter. Third, neither inflation nor catheterization of the Eustachian tubes should be resorted to until the congestion and chronic inflammation of the naso-pharyngeal chambers is reduced to a minimum, and foreign bodies or occlusion have been removed. By thus checking the inflammatory process in the upper air passages the ear affections consequent upon it are arrested and cured much more easily, and return to their normal state and function *pari passu* with the former. After the twentieth treatment locally of the chronic rhino-pharyngitis, and fifth inflation, the tuning fork was heard by bone conduction in the right ear, and after the twenty-fifth treatment and tenth inflation, in the left ear. After the thirtieth treatment hearing returned strong enough for the patient to hear the hammering noise of the carpenters on the building adjacent to the office, and to hear the town clock strike, which was about thirty yards away. From this time the treatment was continued every other day for two weeks, when Miss — could hear the aerial vibrations of the tuning fork, the watch eighteen inches away in right and six inches in left ear, and hear spoken and whispered conversation. And while the chronic naso-pharyngeal catarrh was not cured

entirely, the accompanying symptoms had been relieved, life has been made more pleasant and comfortable, but to permanently cure the former the patient should take some treatment during the fall or spring, or both, to prevent an aggravation of the disease and effect a permanent cure. The physician places the upper respiratory tract in the most favorable condition aseptically and antiseptically for recovery, and through this *vis-medicatrix naturæ* the disease is cured by the mucous and submucous tissues becoming regenerated or growing into former natural state.

Patient was satisfied with results, both anæmia and neurasthenia having subsided. This case, in truth, was an extreme one, and shows conclusively what can be successfully done for suffering humanity. When the premises are right, and one goes right, one is sure to end right.

The cause of the internal ear deafness was primarily in the naso-pharyngeal chambers, viz., chronic naso-pharyngeal catarrh, and it having continuously and slowly invaded the Eustachian tubes and middle ears, producing middle ear deafness; and, having caused chronic irritation or congestion of the labyrinth, it was very easy on the supervention of an acute inflammation of the upper air passages and auditory apparatus to have tympanic and labyrinthian deafness. The latter, either from traction on the ossicula audita by effusion, on the auditory nerve, or from congestion and effusion of the labyrinth.

Rhinologically considered, in the future not only will there be more tympanic disease and deafness cured, but also, labyrinthian disease and deafness; and the writer is convinced from the successful issue in these and other cases observed that the "royal road" to the successful treatment of middle and internal ear disease is in the majority of cases in and through the naso-pharyngeal passages, and before serious structural lesions have taken place in the former.

It is very easy to account for the diverse affections following catarrhal inflammation of the upper air passages, when the physiological, anatomical, lymphatic, neurological and clinical relations of the parts are considered. The meninges and base of the brain are in close proximity to the catarrhal mucous membrane and many blood vessels that the latter supply also supply the former either directly or indirectly. The same is true in regard to the distribution of the cranial nerves. They communicate with various ganglia and proximate and remote organs, and convey irritations directly or reflexly to different parts of the body. With what facility then, when pain, irritation, or inflammation is produced in the terminal filaments of a nerve supplying the mucous membrane of the upper air passages can it be transmitted to distant organs or membranes. It is equally easy to have an irritation or congestions of the brain follow chronic catarrhal in-

flammation of the upper air passages, as tympanic or labyrinthian deafness or laryngitis.

Physiologically the nose warms the respired air, frees it from foreign material before passing into the lungs, protects the air passages, and through the sense of smell warns its possessor of the presence of pleasant or irritating gases, or noxious substances, and its lining is the first part of the respiratory tract to become irritated and chronically congested, or inflamed, and extending by continuity of tissue to the pharynx, tonsils, larynx, trachea, eye, frontal, ethmoidal and sphenoidal sinuses, and to the antrum, Eustachian tubes, and aural apparatus.

THE CLINIC.

CLINICAL LECTURE DELIVERED NOVEMBER 13, 1889, AT THE HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA.

BY W. GOODELL, M.D.,
PROFESSOR OF GYNECOLOGY.

[Reported for THE JOURNAL.]

ABDOMINAL TUMOR, WITH ADHESIONS.

Gentlemen: I must do a little gold beating to-day. By this I mean, that as a small piece of gold is beaten out into a large leaf, so I shall have to spin out what I have to say to-day out of a very small text. I have comparatively little material to bring before you and no operations to fill up the hour. To begin our gold beating:—Day before yesterday, I received from a physician a note, telling me that there was in a small alley in the suburbs of this city, a very poor woman with a uterine tumor, and asking me to get her into the hospital. Therefore, yesterday the ambulance was sent for her and she was brought into the female ward. This morning I bring her before you without having seen her, in order that you may learn how to make a diagnosis.

She has a large and solid tumor in the right side of the abdomen, which extends very nearly to the liver, and is almost immovable by adhesions. This you can plainly see as I expose her abdomen. She says that she is fifty-six years old and the mother of thirteen children, that her monthlies ceased one year ago, that this tumor has existed for several years, and that it has been getting larger and larger since her menopause. She suffers a great deal of pain from this tumor, and has now a frequent pulse and high temperature. Her tongue is dry and red, and she has the hebetude and dulness of sense, due clearly to blood poisoning, probably from the presence of pus somewhere.

I see upon her abdomen what I at first took to

be the scar of a burn; but she tells me they came from a child-bearing and now, upon observing them more closely, I find that she is right. They are lineæ albicantes, old ones stretched open from previous pregnancies and, therefore, white and glistening; not purple, as they would be, if they were of recent origin.

The tumor presents the feature of a fibroid of the womb, but constant pain is rarely associated with such a growth, when it lies above the pelvis, then again septic symptoms should not be present. It is clearly not a cyst, for it is too hard and nodulous. Can it be a malignant growth? a sarcoma or a carcinoma? The latter could not have lasted so long as six years, nor could a sarcoma, unless the growth were first benign, and had later taken on malignant degeneration. Again, a uterine fibroid tumor has but few vascular attachments and requires but little blood for its sustenance. Therefore, very rarely, if ever, does it become converted into a malignant growth, which needs a large supply of blood for development. For this reason, we find cancers flourishing in the more vascular tissues, such as the cervix uteri, the breasts, the lips and the stomach.

But before I exclude cancer or sarcomatous tumor, it is right for me to examine her womb. I find that this organ is movable and healthy, and that the tumor has apparently no connection with it. You see that the sound gives a measurement of only three inches, and the motion communicated to the tumor does not agitate the sound. Yet it might possibly be a pedunculated fibroid of the womb, with high parietal attachments. Why then, does it not grow smaller after the menopause? As a broad rule with, however, some exceptions, uterine tumors that grow larger or make their first appearance after the menopause are usually malignant.

I must confess that I am puzzled, so let me go over her history again: She says that this tumor began in the right side, high up and, in fact, it encroaches upon the liver. Now here is a special point that I wish you to remember. If this were a growth from the liver, I should not have this narrow ribbon of resonance between the tumor and liver, hence it is not hepatic. But the growth dips down on the right side toward the kidney and extends horizontally across to the abdomen. Yet her micturition is not frequent. Her urine has been examined with negative results, and she persists in saying that she has had this tumor for six years. (The patient was now removed.)

I confess, gentlemen, that I am perplexed in making a diagnosis. I can not but think that we have here a malignant growth, either a sarcoma of the omentum or a malignant tumor of the right kidney. The pain, the increase in size since the menopause, the septic symptoms, the nodulous character of the tumor, the age of the

woman, all point to malignancy. In view of this doubt in my mind I shall get this woman to stay here in the hospital for some time, both that I may watch her symptoms and otherwise study her condition, and also that she may have the proper food and be built up; for she is now in too weak a condition to undergo an operation. After she has improved I shall make an exploratory incision into the abdomen and be governed by what I shall find.

After all then, gentlemen, instead of teaching you how to make a diagnosis, I have taught you, what perhaps is as important, how not to make a diagnosis. It is very humiliating for a specialist on abdominal tumors to confess that he is puzzled to make a diagnosis in this or any other case: But, gentlemen, you will find out when you get to be as old as I am, how little you actually do know. Often, time will throw light on an obscure case. Then an exploration incision will throw more. But even this will sometimes fail, for last week I removed before you a very large pelvic tumor, the nature of which I do not know. Both ovaries and tubes were healthy and left behind, yet there was a pedunculated tumor coming off from the broad ligament. I sent it to Dr. Formad, but have not yet got a report from him.

FIBROID TUMOR WITH ADHESIONS.

This is an interesting case which Dr. Taylor and I treated in conjunction. She has multiple fibroid of the womb, which has universal attachments to the pelvic peritoneum. She was brought into the hospital very ill indeed and with all the symptoms of septicæmia, showing the presence of pus somewhere. But we could not discover where it lay. I aided Dr. Taylor in the operation. After cutting down in the median line of the abdomen, he found a womb gnarled with multiple fibroids and with adhesions to all the pelvic organs and tissues so intimate and so numerous, that no topographical outlines could be made out. There were no ovaries, no tubes and no bladder to be recognized. Enlarging the incision, Dr. Taylor discovered behind the tumor and adherent to its whole surface a pus sac. This was accordingly aspirated and found to be full of stinking pus. It was probably an ovary, but so closely adherent to the tumor that it seemed to be growing from it, and there was no possibility of removing it. After washing out the abdomen and especially the sac, the opening of the latter was stitched to the abdominal incision and a glass drainage tube was inserted. The object of the tube was to keep the sac empty, and to make its walls collapse. Just as we put drainage tubes into any kind of abscess, and compress its walls together by bandages, so we put in a drainage-tube into the pus sac, and compressed its walls together by a large pad of cotton and an abdominal binder. The sac was then washed out once a day with carbolized water.

At the end of a week we changed the glass to a rubber tube, which being elastic is not so dangerous. She has done extremely well and the tube has gradually been pushed out by the closure of the abscess, until it goes in only three inches, and in two more weeks she will be ready to go home. These abdominal pus sacs should, when it is possible, be always removed. Yet when they can not be enucleated, it is wonderful how quickly they sometimes will heal up when drainage is employed. They heal up far more quickly than ovarian cysts which can not from adhesions be removed, and which are then treated by drainage.

THE TREATMENT OF FIBROID TUMORS BY ELECTRICITY.

There has been a good deal written and said of late in favor of and against the treatment of fibroid tumors by electricity. The extreme positions assumed by the opposing parties have reminded me of the two knights of ancient fable who, after a sore battle to decide whether the statue before them was of gold or silver, fell grievously wounded each one on that side of the statue which his antagonist had first occupied. They then found to their cost, that each one was right and each one was wrong, for the statue had a golden side and a silver side. Each one held a half-truth, between them they held the whole truth. So when I hear one gentleman advocating nothing but the knife for fibroid tumors, and another as earnest in pushing the claims of electricity, I say to myself, each gentleman holds a half truth, but unitedly they hold the whole truth.

There is no doubt that electricity will sometimes stop the hæmorrhage, and this is in itself a great gain; but whether the tumor will ever become smaller or disappear is yet an open question. The advocates of the knife, with much truth contend, that, granting the hæmorrhage is stopped, the ovaries are themselves greatly diseased in cases of uterine fibroid, and no amount of electricity can cure them. This is a strong argument and it has very frequently been verified by me, when removing the ovaries for fibroid tumors. For instance, only three days ago I removed, at my private hospital, the ovaries of a lady on account of a bleeding and painful fibroid tumor of the womb. Each ovary was found to have undergone fibroid degeneration. Usually, in cases of uterine fibroid, the ovaries are either much diseased or they contain pus-cavities. Sometimes, however, the ovaries are perfectly healthy, no matter how large the tumor may be; but these are exceptional cases. On the other hand, at the change-of-life fibroid tumors generally cease to grow, unless they undergo cystic degeneration. In other words, the woman either ceases to suffer, or she recovers her health after the menopause

has become established. Now, if a woman with a bleeding fibroid can by the means of electricity be tidied over to the menopause, a very great point has been gained. But how are we to know when a uterine tumor is benign and amenable to electrical treatment? I can answer this question better by telling you when they are malignant. When uterine tumors appear in woman after the change of life they are usually malignant. If the uterine tumor appears before the change-of-life and, after the change-of-life, keeps on growing, it is generally malignant, unless it happens to be a fibro-cyst. As a broad rule, with the exception of ovarian cysts, all abdominal tumors that appear after the change-of-life, are usually malignant, unless they are of malarial origin.

The subject of the treatment of bleeding and of growing uterine fibroids by means of electricity is the burning question of the day. I am yet on the fence, although I know that in one case, electricity for the time being checked a very bad case of hæmorrhage; in fact it saved my patient from what Homer calls "The purple death." My advice to you is that, if you can not stop the bleeding by the systemic use of quinine, sulphuric and gallic acids, digitalis, ergot or turpentine; or by the internal applications of vinegar, iodine, nitrate of silver, tannic acid or Monsel's solution, you may send the case to a competent electrician.

I put Monsel's solution last, because it is liable to form a firm and hard clot, which stays behind in the womb and undergoes dangerous decomposition. I have nearly discarded it from my gynecological practice, except in rare cases of capillary oozing on the surface of the abdominal walls of the bowels after ovariectomy, and only in those cases in which Paquelin's cautery is ineffectual or it is inadmissible. But you must not suppose that electricity is altogether a harmless remedy. Repeated cases of death have been reported, and I must honestly confess that I am surprised that more have not occurred, considering the heroic dosage of electricity that is resorted to.

MEDICAL PROGRESS.

THE COLD BATH IN TYPHOID FEVER.—M. JOSIAS reports his experience in the systematic use of the cold bath in the treatment of typhoid fever. During the years 1888 and 1889 he has treated in various hospitals 36 cases by this method, giving the bath at 18° every three hours when the bodily temperature reached or exceeded 39°. One patient died, the mortality therefore being 2.77 per cent. Regarding sex 29 patients were males and 7 females. The cases treated may be divided as follows: Benign, regular and hyperpyretic, 27; grave, with or without complications, 9; relapses, in spite of the cold bath,

4; relapses, treated by the cold bath when the cases had previously been treated by another method.

These 36 patients took 2,227 baths at 18°, an average number of 61 for each patient. The baths were always begun as soon as the diagnosis of typhoid fever was definitely determined, and they were never suspended except temporarily in cases of intestinal hæmorrhage. Menstruation, symptoms of broncho-pneumonia and albuminuria were not regarded as contraindications for the treatment. There was no occasion to regret perseverance in the treatment. Thanks to the baths, the fever exhibited nothing of a typhoid character save the name. Patients treated in this manner are not prostrated; they present no torpor; they remain conscious and lucid; the tongue is moist and thirst is intense, a condition that enables one to administer 4 or 5 litres of alimentary or other fluids daily. There is diarrhœa and excessive polyuria, but these discharges are to be regarded as a means of carrying off the excessive waste of the organism and as consequently of real advantage, the more so because this washing out is effected by the aid of bouillon and milk, whereby the patient secures the advantage of supralimentation the effects of which are easily controlled. The patients above referred to did not lose much in weight and only moderately in strength, losing from 1 to 2 kilo. in eight days, and being able without much effort to get in and out of the bath. The analysis of these 36 cases shows that refrigerating treatment more than any other seems to successfully combat the fever and adynamia and place the patient in the best condition of resistance to the disease. These statistics united to those of MM. Juhel-Renoy and Richard make a total of 130 cases of typhoid fever with 6 deaths, *i. e.*, a mortality of 4.61 per cent.; whereas the general mortality from typhoid fever in the hospitals of Paris is from 14 to 15 per cent.—*La Sem. Méd.*

ABSENCE OF VAGINA.—M. PICQUÉ, of Paris, reports the case of a young woman who presented a total absence of the vagina and an infantile uterus. The vulva was normal. There was an absence of all signs of menstruation, although the ovaries were normal; this was probably due to the malformation or absence of the uterine mucous membrane. Following the suggestions of Dolbeau and Le Fort the operator attempted to remedy the principal defect. Amussat's procedure was adopted. A fibrous cord was found which served as a surgical guide but constituted an actual obstruction to the operation itself. The mucous membrane of the vestibule was made to slide back upon the posterior wall of the new vagina, while the integument of the perineum was made to cover the anterior wall. The reporter believes that this manœuvre is useful as a means of pre-

venting subsequent retraction. The results of the operation remain satisfactory five months after the operation.—*Le Bulletin Médical*.

EARLY OPERATIVE TREATMENT OF PERITYPHLITIS FROM PERFORATION OF THE APPENDIX VERMIFORMIS.—CHAS. KRAFFT, of Lausanne, seeks to show that the treatment of perityphlitis must be of an operative character. In perityphlitis stercoralis there is perforation of the appendix by a faecal calculus, with the formation of a retro-cæcal abscess containing faecal matter. The abscess should be freely opened, the calculus removed, and the appendix ligated and cut off. The symptoms of perityphlitis are suddenly lancinating and pulsating pains, which are soon localized in the region of the cæcum. The patient, generally a young, powerful man, has bent with diarrhoea and constipation. Palpation early in the case reveals resistance in the right iliac fossa, sometimes dulness. If the diagnosis is certain, one can never operate too soon, though he may often do the contrary. Operation: Typical incision, as for ligation of the right common iliac; after cutting through the abdominal walls either fluctuation is made out, or else one makes an exploratory puncture, in order to locate the abscess; this is freely opened, generally extraperitoneal; the calculus is sought, and the appendix ligated and removed; suture of peritoneum, if the latter has been incised; drainage irrigation daily until the wound has united.—*Volkmann's Kil. Vortr.*

CURE OF CHOREA BY ELECTRICITY.—GAUTIER reports a very severe case of generalized chorea in a patient 13½ years old. The patient could not stand erect, nor even sit up straight; neither could he use his hands to dress or feed himself; he could not talk; there was incontinence of urine. From the 16th of July to the 14th of September twenty-six applications of the electrical current were made; duration of each, eight minutes; intensity, first six, then eight, and finally twelve milliampères; direction of current, from the sacrum to the neck. Results: The patient, who at first could not write, became able to do so with neatness and rapidity; the bodily weight increased from 32 to 40 kilo.; he is able to work, and is no longer excitable. The treatment employed before resorting to electricity consisted in the administration of bromide of potassium, sulphur baths, chloral and antipyrin.—*Le Bul. Méd.*

POSITION OF PATIENT DURING THE LYING-IN PERIOD.—DR. CULLINGWORTH, in his address on obstetrics before the recent meeting of the Bristol Medical Association, expressed his doubts regarding the wisdom of requiring patients to maintain the horizontal position after parturition. He also took occasion to quote from the writings of Chas. White, who, more than one hundred years ago, advised that lying-in women should be required

to sit upright in bed while nursing their children and while eating, and to kneel while passing water. He gave as his reasons for this advice the prevention of stagnation of the lochia, the avoidance of constipation and retention of urine, and the promotion of uterine contraction.—*Brit. Med. Journal*.

TOTAL EXTIRPATION OF LARYNX.—PROF. DEMONS, of Bordeaux, exhibited a patient at the meeting of the French Surgical Congress, upon whom he had performed total extirpation of the larynx, thirty months previously, on account of an epithelioma limited to the right vocal cord. The patient, who is now 58 years old, is in perfect health. He wears no artificial apparatus, and still, thanks to certain movements of the lips and tongue, he is able to speak in a very intelligible manner, though in a very low voice.—*Le Bulletin Médical*.

A CASE OF POISONING FROM ANTIPYRIN.—PANSCHINGER reports (*Centbl. für Gyn.*) a case of poisoning by antipyrin in which a new symptom was observed, viz: profuse diarrhoea, which set in a few hours after the last dose was taken. In all 5 grams were taken, 1 gram every hour. Aside from the diarrhoea, the principal symptom was the usual collapse. The patient recovered in ten days. The medicine was obtained from an apothecary, and without a prescription.

SUBCUTANEOUS INJECTION OF BLOOD BY THE ZIEMSEN METHOD.—WESTPHALEN reports (*St. Petersburger Med. Wochenschr.*) a case of so-called essential anæmia which occurred suddenly in a man 56 years of age, after an attack of intestinal catarrh with fever. A bothriocephalus latus was discharged and the patient was treated with liq. ferri dialysæ, but no improvement took place in his condition. An examination of the blood showed a notable decrease in the number of red blood corpuscles present (840,000 per cubic millimetre). A subcutaneous injection of 150 ccm. of defibrinated human blood was then administered, and within eight days marked improvement was observed in the patient's condition, which continued until final recovery.

CHOLELITHIASIS.—M. ROSENBERG reports (*La Sem. Méd.*) excellent results in cholelithiasis from the administration of large doses of olive oil. Of late he has added menthol to the oil on account of its anæsthetic properties, which serve to lessen the inclination to vomit; cognac is also added to improve the flavor. The reporter has collected the reports of twenty-one cases of this disease, nineteen of which were successfully treated by this method. The explanation of the method of cure is this, that the ingestion of large amounts of oils and fats increases the secretion of bile, and hence favors the expulsion of the calculi.

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INTESTINAL SUPERDIGESTION.

An article with this title appears in the *New York Medical Journal* of Nov. 9, from the pen of DR. W. S. CHRISTOPHER, of Cincinnati. The term is used to designate the pathological fermentation of the products of normal intestinal digestion. The author's deductions are based upon well established chemical laws, and, if true, go far toward the explanation of a train of phenomena concerning which our knowledge has been very incomplete.

Christopher's aim is to elucidate the pathology of the intestinal fermentations. He objects to the prevalent idea that fermentation is opposed to digestion; or, in other words, that a food may be either digested or undergo fermentation, but cannot be both digested and fermented. On the contrary he believes that the action of the digestive ferments is usually, if not always, a prerequisite to the action of the microorganisms of pathological fermentation. The process is thus brought into analogy with the alcoholic fermentation of cane-sugar; for it is a well known fact that the latter process cannot occur until the sugar has been inverted; that is, transformed into the two glucoses, dextrose and levulose, by a soluble ferment accompanying the yeast plant and probably produced by it. Superdigestion is always induced by microorganisms, and varies in its results according to the food upon which these develop.

We have therefore superdigestion of proteids,

of fats, and of carbohydrates; and each of these forms is discussed in the paper.

Concerning the superdigestion of proteids, the author tells us that it may also occur in the stomach, but is there less frequent than in the intestine. In the products of tryptic digestion it is exceedingly common. This difference he believes is due less to any doubtful antiseptic action on the part of the gastric juice than to the difference in extent of the digestion or decomposition of the albuminoid molecule produced by the two juices. "The most interesting of the decomposition products of proteids, for our present purpose, are the fatty acids, the ptomaines, and the gases, which latter comprise carbonic acid gas, ammonia, nitrogen, hydrogen, marsh gas, and sulphuretted hydrogen." The ptomaines, the most important of these products are alkaloids, and produce their effect through the agency of the central nervous system. A frequent group of symptoms produced by this putrefaction "comprises constipation, headache, drowsiness, and listlessness, or even marked depression—the so-called biliousness." The author has also seen a group of symptoms comprising "constipation, coma, contracted pupils, slow and shallow respiration, and a depressed heart-action."

But he considers the superdigestion of the carbohydrates the most important as well as the most frequent form of intestinal fermentation in adults. Normal digestion converts all the carbohydrates, starch, cane-sugar, maltose, lactose, into glucoses. Subsequent fermentation may convert the glucose into alcohol with liberation of carbonic acid gas; or into one of several fatty acids, which in turn breaking up give rise to carbonic acid gas, and hydrogen or marsh gas. The clinical features and the treatment of this form of fermentation were presented in the report of two cases in which the trouble had been diagnosed and successfully treated. The most prominent symptoms were constipation, tympanites, and abdominal pain. The chief feature of the treatment was the withholding of those articles of diet (carbohydrates) in the products of whose digestion the abnormal fermentation was believed to have occurred. However, since total abstinence from the carbohydrates for any length of time is next to impossible, (and this implies the exclusion of milk on account of its contained sugar,) the author recommends the allowance of

a small amount of farinaceous food and the administration therewith of an active diastatic ferment by means of which the starch may be digested in the stomach.

We doubt not that Dr. Christopher has given us a true explanation of a certain number of cases of intestinal fermentation; in other words, that he has described a possibility. We regret, however, that he has not given us some data in support of his assertion that this is the most frequent form of intestinal fermentation beyond the fact such is his individual belief. The frequency with which we encounter in these cases gross errors in diet with the passage of undigested food, especially in children, is sufficient evidence that fermentation may occur in food that has wholly or in part escaped the action of the digestive juices. And although the paper is expressly limited to intestinal fermentations it seems that stomachic fermentations should have been discussed so far at least as to point out the means of distinguishing them from processes occurring in the bowels.

We trust that the author will yet more fully elaborate his theory with especial reference to the relative frequency of superdigestion and its differential diagnosis.

CONCLUSION OF VOLUME XIII.

For thirty-four years it had been the custom of the American Medical Association to publish, each year, a single volume containing the Proceedings of the Annual Meeting for that year and such papers as were referred for publication.

As time went on and the Association work was more extended these Transactions became more and more voluminous. The work of editorial supervision came to be a serious one, and the necessary delay incident to publication led to an extended discussion of methods, until finally it was determined that instead of issuing the Transactions in single annual volumes, a weekly medical journal should be substituted, in which during each year the entire proceedings of the Association for that year and the papers read in the several Sections should be published, and in order that *THE JOURNAL* might be still more valuable to the members, it was decided to provide for the publication in its columns of such other original and selected matter as would justly entitle it to a prominent place among the leading medical periodicals of the day.

It was not without solicitude that the Trustees charged with the responsibility of conducting this enterprise assumed the duties thus assigned to them. They were fortunate in securing such editorial and financial ability combined in the person of an Editor-in-chief that from the first *THE JOURNAL* was able to command for itself the confidence of the profession and to attain a sound financial basis. After five and a half years of untiring labor the Editor desired to be relieved of the responsibilities of his position, and at his earnest solicitation his resignation was accepted. It was then decided to continue the publication of *THE JOURNAL* under the direction of the Board of Trustees, and that its immediate supervision should be vested in a special Board of Management. Under that supervision the volume closing with the present number has been edited and published.

The same careful oversight as in former years has been exercised with reference to the finances of *THE JOURNAL*. Its receipts at the office of publication during this as compared with the previous year have been somewhat increased, while the expenses of publication have been diminished. If the payments of annual dues by the members shall be as prompt as in former years, we see no reason why in the future *THE JOURNAL* may not only continue free from debt, but material additions be made which would enhance its value to members and subscribers.

It is the sincere desire of *THE JOURNAL* to reflect fully and impartially the interests and the wishes of the Association, and to labor for its upbuilding in every legitimate way. It desires to be in full accord with every honorable effort for the educational improvement of the medical profession of our country, and for the *unification* of all medical interests. It seeks the hearty support of the entire membership of the Association, and will earnestly unite in the effort to extend that membership until the Association shall have a strong and influential representation in every State in the Union. It is grateful for the courtesies so freely accorded by other medical journals, and in seeking to develop its own interests, will be as studiously careful in no wise to imperil theirs.

At the close of another volume, *THE JOURNAL* craves for each member of the Association only pleasant memories of the old year, and tenders its greetings for the *New*.

EDITORIAL NOTES.

HOME.

THE LIBRARY OF THE LATE DR. BAUER, the celebrated German scholar of Leipsic, has just been purchased by the Haverford, Pa., College for a large price. It consists of 8,000 volumes on ecclesiastical literature and history,

THE UNIVERSITY OF CINCINNATI contemplates the establishment of a Medical Department. The aim is to so richly endow it as to make it rival if not eclipse the existing institutions of this region. The project is as yet chimerical, however, the source from which the phenomenal endowment shall come not having been ascertained. There is at present a nominal connection between the University and nearly all the other educational institutions of the city, by which the two leading medical colleges, the Ohio, and the Miami are designated as the Medical Department of the University of Cincinnati, and this is about as close as the relation is likely to become, notwithstanding the fact that a correspondent of an eastern medical journal, probably in a facetious moment, hints at the possible collapse of the now prosperous medical colleges, should the University prove successful in its project. Certainly the old institutions, particularly the Medical College of Ohio, established in 1819, will not voluntarily close their eventful histories and begin anew in 1890.

DEATH UNDER ETHER.—At Bellevue Hospital a death under ether, used as an anæsthetic, recently took place, during an operation for abscess in the neck. At the autopsy, the kidneys were found to be diseased, through cystic degeneration.

DR. J. J. KANE, for a number of years a surgeon in the United States Army, has recently been appointed one of the attending surgeons to St. Mary's Hospital, Cincinnati.

MEDICAL DIRECTOR J. S. BILLINGS.—Dr. John S. Billings has been invited to take the position of Medical Director of the University Hospital at Philadelphia. The Secretary of War, and the Surgeon-General of the Army, have signified their approval and Dr. Billings will assume this new function, without change of official duties in the Surgeon-General's office.

THE LIFE-SAVING SERVICE.—The annual report of the Life-Saving Service of the United

States Government, for the last fiscal year, shows that the number of persons involved in the operations of the department was over three thousand, the number of persons saved or succored, 787, number of those lost, 42. The cost of maintenance last year was \$293,000.

A NEW CHARITABLE INSTITUTION, known as Christ's Hospital, has recently been established in the West End, Cincinnati. It is conducted by a corps of qualified physicians under the auspices of the Methodist Episcopal Church.

FOREIGN.

A FEVER-HOSPITAL DESTROYED BY FIRE.—At Rochester, England, the Fever-Hospital was destroyed by fire, November 29. There were fifteen patients there at the time, and all were rescued by the nurses, although with no little difficulty and risk.

DISINFECTION OF BARBERS' INSTRUMENTS.—Several cases of transmission of contagious diseases by barbers' instruments having come to light at Nordhausen, the police of that city has passed an ordinance enjoining all barbers, under penalty of the law, to disinfect their instruments by immersion in a solution of carbolic acid or creolin after being used.

CRUSADE AGAINST ALCOHOLISM.—The Government of Belgium has decided to combat, as far as possible, the progress of alcoholism. After demanding and obtaining from Parliament a law permitting the exaction of a license fee for new public houses of a greater or less amount, according to the population of the locality, it has also raised the subsidy which it grants to the Patriotic League Against Alcoholism from 500 to 1,000 francs.

MEDICAL STUDENTS IN THE EUROPEAN UNIVERSITIES.—A recently published University calendar shows the following attendance of medical students during the summer semester of 1889: Vienna, 2,064; Munich, 1,462; Berlin, 1,186; Würzburg, 983; Dorpat, 931; Leipzig, 874; Graz, 586; Krakau, 522; Freiburg, 452; Greifswald, 422; Bonn, 402; Breslau, 380; Halle, 337; Kiel, 316; Erlangen, 301; Strassburg, 300; Heidelberg, 297; Zürich, 288; Innsbruck, 285; Königsberg, 266; Tübingen, 265; Bern, 251; Marburg, 236; Göttingen, 227; Jena, 226; Giessen, 173; Rostock, 155; Basel, 109.

TOPICS OF THE WEEK.

BANTOCK'S VIEWS OF LISTERISM.

As an appendix to a paper on "Hyperpyrexia after Listerian Ovariectomy," read before the Royal Medical and Chirurgical Society in December, 1880, DR. BANTOCK published a table of 162 cases of completed ovariectomy. In the November number of the *British Gynecological Journal* of this year he publishes a table including remarks on 238 additional cases, bringing his total list to 400. It is extremely interesting to survey the results and the methods of this eminent surgeon, who says that in 1881 there were only two men, as far as he knows, who ventured to perform ovariectomy without a rigid observance of all the details of the Listerian method. These two men were Mr. Lawson Tait and himself. In speaking of the present state of the Listerian method he says in England, at least, it is a very rare thing to see the spray in use at all. In the Samaritan Free Hospital it has been discarded by all of his colleagues with but one exception. And he adds it is making no assumption when he says that this is due to the superior results which he has obtained there since he resorted to a more rational and more simple method. Still, he adds, the belief in so-called antiseptics has a firm hold on many minds, and although the belief in the efficacy of the spray has wellnigh died out, it is not so with other details of the method. For whether it be carbolic acid, or corrosive sublimate, or horacic acid, or whatever it may be, few operators venture to perform an operation without employing one of these agents for the hands, sponges and instruments.

As a proof that he is making no assumption when he says that his results led to the discarding of the spray in the Samaritan Hospital he gives the following results: He confines himself to the cases of ovariectomy, and records it as a fact that from April, 1885, to October, 1888, a period of three years and a half, he did not lose a case in that hospital with a series of ninety cases. While on the other hand, during this period the mortality under the Listerian method exceeded 12 per cent. Moreover, he affirms that his patients recovered with less pyrexia than under the carbolic acid treatment. As an excuse for recurring to this question once more—he hopes for the last time—he gives the fact that he is constantly learning that there still exists a belief that he employs some form of so-called antiseptic in his operations. Once for all, then, he wishes to repudiate, and in strong and unmistakable language he does so.

For his hands, instruments and sponges, he uses plain water; he takes no precaution to sterilize it, "as it is called," by boiling; he regards water that is fit for drinking and household purposes generally as suitable for the purpose of any operation; that while the water is heated—but not necessarily boiled—he has no hesitation in cooling it down, if too hot for his hands, with cold water drawn fresh from the tap; as, for instance, when washing out the peritoneum, and that he pays the greatest attention to cleanliness and sees that all utensils are as clean as water can make them. He washes his hands very

carefully before commencing an operation, making them as clean as soap and water and a nail-brush can make them, and he frequently cleanses them during the operation. He goes so far as to use the nail blade of his pocket knife for removing all matter from under his nails after washing, without adopting "that refinement of absurdity" which consists in previously passing the blade through the flame of a spirit lamp. As a covering to the wound he employs simple absorbent gauze, perfectly innocent of any germicide or foreign substance. And such is his belief in the hurtfulness of "germs" that, were it not for other considerations, he would leave all his wounds exposed to the air—as, for example, he has sometimes done in amputation of the breast, and always in the operation for restoring a ruptured perineum.

What, then, he says, are the results of this method, speaking generally? They are these, viz.: that while in his first hundred ovariectomies, the majority having been done under the Listerian method or a modification of it, he lost nineteen cases, in his second hundred, while he was gradually abandoning this method, the mortality fell to fourteen; in the third hundred, all performed with plain water, the mortality was eight, and in the fourth hundred it was only four.

In the general management of an ovariectomy, in several particulars his practice differs materially from that of nine years ago.

1. *Washing out the Peritoneum.*—The writer gives a very interesting history of how he gradually adopted this method, without precedent to work by, until he reached his present state of perfection. At first he used whatever came most conveniently to hand—a pint or a quart jug, or a clean Higginson's syringe—but for a considerable period he has used Lawson Tait's apparatus, which he has improved by adding a ball free from valves to facilitate the starting of the siphon action. A full stream of water, such as this apparatus gives, removes all clotted and fluid blood, serum, débris of broken-up ovarian tumor, or fibrinogen, much more effectually than it is possible to do by any other means, and without any irritation of the peritoneum. It is especially useful in cases of ruptured colloid tumor, for the warm water rapidly dissolves out the colloidal matter, which in these cases is so frequently found attached to the omentum, appendices epiploicæ, etc. He has never known evil results follow the use of water, but he has several times regretted that he did not resort to it. Nor is he at all particular in getting all the water away. In ruptured colloid tumor, every one who has had experience, he says, knows that the peritoneum is usually covered with a very delicate layer of capillaries, the slightest sponging of which causes serious injury and oozing. In these cases also I remove no more water than comes to the surface. In a long discussion of the bad results obtained by other operators in washing out the peritoneum, Dr. Bantock attributes these results to the employment of some form of antiseptic materials in the water which become absorbed or in some way poison the patient. He says it is too late to deny the possibility of the absorption of carbolic acid by the peritoneum. There are too many observations on record to prove the fact beyond a doubt. We know also that as

in the case of corrosive sublimate or any mercurial preparation, some persons are peculiarly sensitive to its action, and that while in a large majority of cases no harm may accrue, yet now and then a case is met with in which this idiosyncrasy exists. This is the only rational way of accounting for the large number of deaths due to the use of carbolic acid, and more especially corrosive sublimate. He protests, then, against the employment of any so-called germicide substance in flushing the peritoneum, and cannot too strongly insist on confining the surgeon to plain water as at once perfectly innocuous and thoroughly efficient.

2. *The Treatment of the Pedicle.*—In the beginning of the year 1876, dissatisfied with the clamp, he announced his intention of exclusively employing the ligature until he had settled the question to his own satisfaction. Since the 25th of November, 1875, he has used it exclusively, and he has now the satisfaction of witnessing its almost universal adoption. He soon, however, found that there were difficulties in the way, for he lost his nineteenth case from the slipping of the outer edge of the pedicle—that edge which consists of two folds of the peritoneum with its contained vessels. To obviate this source of danger he adopted the plan of first securing this fold by a separate ligature before transfixing for the main ligature. He prefers the figure of eight loop in the ordinary cases.

3. *Opium.*—It was about the time he resorted to flushing the peritoneum that he also discontinued the use of opium after operations. His mortality, he calls attention to, has been under 4 per cent. since discontinuing its employment. Not only have the patients recovered in larger numbers, but they have recovered better.

4. *General After-treatment*—(a) *Vomiting.* It is now a long time since he came to the conclusion that the best way of arresting sickness was to keep the stomach as quiet as possible by preventing anything getting into it. No food is allowed for many hours after operating. He prefers operating in the morning for that reason. If the stomach is found to contain some watery mucus which the patient is unable to get rid of by vomiting, a few ozs. of hot water will usually suffice to clear out the stomach. (b) *Thirst.* For this distressing desire the patients are allowed to rinse their mouth with warm water. Ice in any way is not tolerated. (c) *Peritonitis.* According to this writer peritonitis arises from causes operating within the peritoneal cavity and causes outside of it. The chief of the former, which he does not stop to enumerate, can be obviated largely by the use of the drainage tube. Or the scraping of the peritoneum may be found necessary. The latter can be relieved oftentimes by removing the offending material from the intestinal canal. This he prefers to do by means of injections. In the condition in which Tait and Smith give salines he believes in adopting the opposite course. In his experience purgatives have always aggravated the condition.

DR. H. NEWELL MARTIN'S LECTURES.

Dr. H. Newell Martin is delivering a series of lectures upon the "Relations of Psychology to Physiology," at Johns Hopkins College.

PRACTICAL NOTES.

DANGER OF LAPAROTOMY PERFORMED BY GAS LIGHT.

ZWEIFEL has observed on several occasions when laparotomy has been performed by gas light, that not only the patient, but the operators experienced a slight roughness of the throat, especially when the operation was a protracted one. Several patients who had undergone operations at the Gynecological Clinic at Leipsic, in which this roughness was experienced, subsequently developed catarrhal pneumonia. A patient who had completely recovered after operation afterwards succumbed to this pulmonary inflammation. The cause is sufficiently obvious. The chloroform becomes decomposed by the light of gas or petroleum. The smell of the products of this decomposition has sometimes become so pronounced that it has been thought some material was burning in an adjoining chamber.—*Gazette de Gynécologie.*

A NEW DUSTING POWDER.

DR. KIEZER publishes an interesting paper on the use of salol as a dusting powder. He applied it in the following combination:

Salol	5j.
Amylum powder	5j.

A varicose ulcer, in which all kinds of treatment had invariably been tried, was nearly completely cicatrized six weeks after the first application of salol. Six other cases of ulcerated leg were treated with the salol dusting powder; in all of them except one the success was equally marked as in the first case. Excellent services were also rendered by the dusting powder in cases of sycosis, burns, scalds, wounds, defects of the skin, etc.—*Prov. Med. Journal.*

ON THE PROPHYLACTIC VALUE OF PULMONARY GYMNASTICS.

DR. GÆTHGENS, of Riga, points ("Proceedings of the Riga German Medical Society," 1889, p. 547) to a great prophylactic value of systematically training the lungs. A thorough ventilation of the organs, more especially of their apices, requires a certain muscular strength, as well as an erect carriage of the body. Even in persons with a normally-built chest an habitual defective respiratory action is followed, in course of time, by a permanent pulmonary weakness and a decrease in the capacity of resistance towards any pathogenic principles finding their way into the lung. In subjects with an hereditary phthisic predisposition—that is, in subjects with a poorly-made chest, flabby muscles and lowered power of resistance—the dangers of a defective respiration are

still by far greater. In addition, in either of the categories the dangers are not limited to a train of pulmonary diseases, but also include various anæmic or chlorotic disturbances, as well as nervous affections. Hence, the pulmonary gymnastics are of a paramount practical importance, and should be systematically resorted to in all children, and that at a possibly early age. In other words, every child's respiratory organs should be methodically trained by means of certain physical exercises, consisting mainly of steady and deep respirations in free air, the child standing or walking in a perfectly upright position. Once the habit of thoroughly ventilating the lungs has been firmly established by a training course of this kind, the child unconsciously or instinctively retains it for life. The author is about to initiate the gymnastic courses of this sort on a large scale.

ASSOCIATION NEWS.

American Medical Association—Forty-first Annual Meeting.

Section of Obstetrics and Diseases of Women.

The officers of the Section of Obstetrics and Diseases of Women respectfully request those who desire to read papers in that Section at the meeting of the American Medical Association to be held in Nashville, Tenn., May 20-23, to communicate the titles thereof to either of the undersigned not later than January 15, 1890.

WILLIAM WARREN POTTER, Chairman,
284 Franklin St., Buffalo, N. Y.

JOSEPH HOFFMAN, Secretary,
126 W. Diamond St., Philadelphia, Pa.

MISCELLANY.

JABORANDI AND THE HAIR.—Some discussion has taken place as to the use of jaborandi in connection with the hair. The senior surgeon to the London Skin Hospital states that it is a valuable drug in the treatment of diseases of the hair, promotes the growth in certain cases and influences the color in others. He deprecates its use, however, except under medical advice.—*British and Colonial Druggist*.

LETTERS RECEIVED.

Dr. J. G. Stewart, Murrysville, Pa.; Dr. Wm. Snow, Jr., Ayer, Mass.; Dr. N. F. Tanski, Cincinnati, O.; Dr. Wm. H. O. Taylor, Union Hill, N. J.; Provident Chemical Works, St. Louis, Mo.; Dr. Henry B. Baker, Lansing, Mich.; Dr. C. R. Parke, Bloomington, Ill.; Dr. H. Holbrook Curtis, Chicago; Dr. G. L. Magruder, Washington; Dr. D. Johnson, Northfield, Vt.; Dr. Geo. H. Rohé, Baltimore, Md.; Dr. M. R. Crain, Rutland, Vt.; Trübner & Co., London, Eng.; Dr. J. Owens, St. Paul, Minn.; Drs. Brown & Irion, Fort Worth, Tex.; Western Pennsylvania Medical College, Pittsburg, Pa.; Dr. Wm. P. Dewees, Salina, Kan.; Dr. H. W. Williams, Boston; Dr. Geo. Cowell, Tecumseh, Mich.; Maltine Manufacturing Co., New York; Dr. D. B. Collins, Muscoda, Wis.; Lutz & Movius, New York; Dr. J. B. Summers, Milton, Ind.; Dr. C. C. Hunt,

Dixon, Ill.; Dr. Ira McEwen, Mound Valley, Kan.; Dr. Walter C. McDonald, Trenton, N. J.; Dr. S. O. Kengla, San Francisco, Cal.; Dr. A. B. Frazer, Elbridge, N. J.; Dr. P. L. Brick, LeMars, Ia.; Dr. W. W. Taylor, Memphis, Tenn.; Dr. H. D. Judkins, Jasper, Minn.; Dr. D. D. Rose, Dodge City, Kan.; Dr. S. B. Heiner, Lima, O.; Dr. J. A. Martin, Palestine, Ill.; The Subscription News Co., Chicago; Dr. A. R. Baker, Cleveland, O.; Dr. W. C. Owen, Newburg, Mo.; Dr. A. G. Young, Augusta, Ga.; F. A. Davis, Philadelphia; Century Chemical Co., St. Louis, Mo.; Dr. A. B. Newkirk, Los Angeles, Cal.; N. Murray, Baltimore, Md.; Dr. J. B. Andrews, Buffalo, N. Y.; Dr. Theo. Griffin, Baxter Springs, Kan.; Dr. C. W. Richardson, Washington; J. H. Bates, New York; King's Medical Advertising Agency, New York; Dr. J. A. Etheridge, Eatonton, Ga.; Dr. A. L. Hummel, Philadelphia; Dr. George Minges, Dubuque, Ia.; Dr. George Duffield, Detroit, Mich.; Dr. T. B. Greenley, West Point, Ky.; Valentine's Meat Juice Works, Richmond, Va.; Dr. R. J. Dnnghlison, Philadelphia; Dr. M. A. Bogie, Kansas City, Mo.; Dr. D. C. Ewing, Batesville, Ark.; Clapp's Subscription Agency, White Pigeon, Mich.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from December 14, 1889, to December 20, 1889.

By direction of the Secretary of War, Lieut.-Col. Charles T. Alexander, Surgeon, will be relieved from duty as Medical Director, Dept. of the Columbia, on receipt of this order at the Hdqrs. of that Dept., and will report in person to the Commanding General, Div. of the Atlantic, for the purpose of preparing for, and becoming familiar with, the duties of attending surgeon in New York City. He will also, upon his arrival in New York, assume the duties of examiner of recruits in that city. Major William F. Waters, Surgeon, will take temporary charge of the office of Medical Director, Dept. of the Columbia, upon the relief of Lieut.-Col. Alexander, and perform the duties pertaining thereto. S. O. 291, A. G. O., Washington, December 14, 1889. First Lieut. R. R. Ball, Asst. Surgeon, is relieved from temporary duty at Ft. Sill, I. T., and will return to his proper station, Ft. Riley, Kan. S. O. 182, Hdqrs. Dept. of the Missouri, Ft. Leavenworth, Kan., December 12, 1889.

With the approval of the Secretary of War, the leave of absence granted Capt. C. N. B. Macaulay, Asst. Surgeon, in S. O. 166, Dept. Mo., November 8, is extended one month. Par. 10, S. O. 294, A. G. O., December 18, 1889.

Capt. George McCreery, Asst. Surgeon U. S. A. (Ft. Warren, Mass.), is granted leave of absence for one month, to take effect upon the arrival at that post for temporary duty of Capt. Samuel Q. Robinson, Asst. Surgeon. Par. 6, S. O. 289, Div. Atlantic, December 18, 1889.

Capt. Samuel Q. Robinson, Asst. Surgeon U. S. A. (Ft. Hamilton, N. Y. H.), will proceed without delay to Ft. Warren, Mass., and report to the post commander for temporary duty. Par. 5, S. O. 289, Div. Atlantic, December 18, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending December 21, 1889.

Asst. Surgeon I. W. Kite, promoted to be a P. A. Surgeon, U. S. N.

Asst. Surgeon E. P. Stoner, promoted to be a P. A. Surgeon, U. S. N.

Asst. Surgeon O. D. Norton, promoted to be a P. A. Surgeon, U. S. N.

Asst. Surgeon Chas. P. Henry, placed on the Retired List, U. S. N.

Asst. Surgeon Geo. McC. Pickereil, ordered to Navy Yard, Washington, D. C., for temporary duty.

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